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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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AN INTERNATIONAL COMMISSION FOR THE MAINTENANCE OF LAKE LEVELS ENDORSED BY COL. RAYMOND, CORPS OF ENGINEERS, U. S. A.

PHILADELPHIA, Pa., Sept. 5, 1899.

THE MARINE RECORD:

I have to acknowledge the receipt of your letter of the 26th ult., inclosing Mr. Firth's article in relation to lake levels, and requesting my views upon the subject. I am decidedly of the opinion that this question should be carefully investigated by an international commission representing both the United States and Canada, as suggested by Mr. Firth. This course was recommended some time ago by a Board of Engineers, consisting of Colonel Lydecker, Major Symons and myself.

I am not at present prepared to express any opinion with reference to the probable effect upon the lake levels, of the canals referred to by Mr. Firth, because the data for reliable determinations are not yet available. Colonel Lydecker is now making extensive observations to obtain the necessary information, and the United States Board of Engineers for Deep Waterways, is also giving thorough consideration of this important question.

Your truly,

W. C. RAYMOND.

Lieut. Col. Corps of Engineers,
Pres. Board of Engineers for Deep Waterways.

LAKE LEVELS MUST BE PRESERVED—INTERNATIONAL PERMANENT REGULATION WANTED—TAPPING THE LAKES UNDENIABLY DETRIMENTAL.

SAULT STE. MARIE, MICH., Aug. 29th, 1899.

THE MARINE RECORD.

Absence from the city has delayed my acknowledgement of your letter of Aug. 21st., inviting my attention to an article by Mr. F. J. Firth on the "Preservation of Lake Levels," and my views on this subject.

Lake levels must be preserved, there is no question as to that, and I would go a step further and urge not only preservation of present normal conditions, but "regulations to such plans as will guarantee to this incomparable highway the most permanent stable conditions."

Not only are the interests of lake navigators but also those of the present and future developers of the known and hidden resources of that vast empire North and West of the Great Lakes at stake, the growth of the former depending

upon the extent of the latter, and, in my opinion no precautions short of "regulation of the upper lakes" will prove at all adequate.

An international agreement by which the two peoples interested would pledge themselves to guard this, their common highway, would, in the writer's opinion, not only be fruitless of results but pregnant with danger unless it has permanent regulation for its ultimate purpose; and while the consideration of this question as applied to the entire chain of lakes may be somewhat premature at this time, a sufficiently safe preliminary joint understanding may be an early desideratum. As to the probable effect of the series of canals tapping the lakes, such as outlined in Mr. Firth's communication, I do not suppose that any one denies that the present conditions of lake levels would thereby be disturbed, but on the other hand, any withdrawal of water which is again returned to the lakes at the same or lower level, could readily be compensated for by proper works, and no doubt exists in the writer's mind, that the custodians of the navigable waters of the U. S. will at all times be prepared and competent to cope with each individual case where diversion of waters from the lakes is proposed for whatever purpose.

Respectfully,

H. VON SCHON.

LAKE LEVELS A GREAT COMMERCIAL FACTOR—NIAGARA RIVER WORK NOT APPROVED—CHICAGO DRAINAGE CANAL A MENACE—AN INJUNCTION CALLED FOR.

FACTS FROM G. H. RAYMOND.

BUFFALO, N. Y., Sept. 4, 1899.

THE MARINE RECORD:

Your favor of the 2nd, asking my opinion on the matter of "Maintaining the Lake Levels," which has been so ably taken up by your journal since the letter of Mr. Frank J. Firth, published in your July 20th issue, has received my careful consideration.

Some propositions require expert evidence to decide them. Others require the use of even a very small amount of horse-sense only. The matter of maintaining lake levels is certainly one of the latter class. In the absence of absolute evidence on any proposition, it will be safe to base conclusions on the most simple laws.

The Great Lakes are to-day the greatest commercial factor on the face of the globe. No single act of Providence would work such immediate and direct injury to so many millions in the world as the drying up of the Great Lakes. The price of the loaf of bread to every consumer almost on the face of the earth, would at once be affected. This is a matter that requires no argument to demonstrate.

The Great Lakes are simply a series of reservoirs connected with each other by small water courses and apparently for the sole purpose of keeping those reservoirs as high as possible, and to prevent their rapid lowering. It is easy to say that these continual attacks on these reservoirs for one purpose or another, do not amount to as much as the climatic changes will bring about, but that has nothing to do with the case.

If each lake is preserved in its integrity it is possible to establish a level for each lake that can be practically maintained by a series of gates and locks, as in that way only the excess would be permitted to leave the levels. In this way vessels could at all times have the maximum load line depending upon the lakes they sought to move over.

The improvement of the Niagara river by digging out the mouth of the river, was about as foolish a plan as could ever have been devised. What should have been done was not only not to dig out the mouth of the river, but to narrow up

the mouth, and increase the depth of water through Black Rock Harbor, and drop the boats again into the river, by a lock below the International bridge. In this way Lake Erie could have been kept at any desired level, and this form of improvement will finally be made.

The Chicago drainage canal is an absolute menace to all the lower lakes, and would seem that the Canadian government has a perfect right to protest against such a perversion of the waters of Lake Michigan as must sooner or later affect the level of Lake Erie and Lake Ontario. If one were to examine the irrigation laws of the various Western States, they would at once see that as a legal proposition alone, the Chicago drainage canal could be properly stopped by the Canadian authorities, if such process were possible.

No person has a right to divert the waters of any streams that they affect adversely the rights of parties living farther down the stream. The lakes are a series of great rivers, and it would be quite within the legal rights of the State of New York, through the United States courts, to at this time take out an injunction preventing the citizens of the State of Illinois from diverting to the Mississippi river the waters of Lake Michigan, which would naturally flow into Lake Erie and Lake Ontario.

THE MARINE RECORD is entitled to great credit for taking up this matter, and it is high time that the legal aspects of the case be considered, and it would be a very simple procedure for the Attorney-General of the State of Ohio to at once begin proceedings against the State of Illinois to stop this unwarranted diversion. It is good sense, it would appear, and that is usually pretty good law.

There should no grants be given for any power canals of any kind at the Sault, nor should there be permitted any canals that would even tend to lower the level of any lake. All improvements should be in the way of holding water back, and not in rushing it away as fast as possible, to the sea.

Hope you will continue the good work,

Very respectfully,

G. H. RAYMOND

TO DEPRESS THE LAKE SURFACE.

Instead of endeavoring by all possible means to secure greater depths of water, this is the way experts figure on reducing the level of the lakes:

The combined area of Lakes Huron and Michigan is 46,250 square miles. This is equal to $46,250 \times 27,878,400 = 1,289,376,000,000$ square feet. With a depth of one inch this area will contain 107,448,000,000 cubic feet of water.

Assuming a mean average abstraction of 15,000 cubic feet per second from Lake Michigan by the Chicago drainage canal, it will take $107,448,000,000 \div 15,000 = 7,163,200$ seconds to lower the surface of Lake Huron and Michigan one inch.

$7,163,200 \div 3,600 = 2,000$ hours, nearly=83 days.

For a depression of 3 inches gives $83 \times 3 = 249$ days.

Assuming that, in a lowering of 3 inches, the surface area will be contracted about $\frac{1}{1000}$ part of its original size, we have approximately a water area of 46,200 square miles. $46,200$ square miles $= 46,200 \times 278,784,000 = 1,287,982,080,000$ square feet.

With a depth of one inch, this area will contain 107,331,840,000 cubic feet of water. At a mean discharge per the Chicago drainage channel of 15,000 cubic feet per second, it will take $107,331,840,000 \div 15,000 = 7,155,456$ seconds to depress the surface of the lake one inch, $7,155,456 \div 3,600 = 1,988$ hours=82 5-6 days. And to depress the lake surface $3\frac{1}{2}$ inches will take $82 5-6 \times 3\frac{1}{2} = 290$ days.

To depress the lake surface the first 3 inches.....249 days
To depress the lake surface the last $3\frac{1}{2}$ inches.....290 days
To depress the lake surface $6\frac{1}{2}$ inches.....539 days

The foregoing calculations have not been verified.



DULUTH-SUPERIOR.

Special Correspondence to The Marine Record.

The total shipments of lumber from the head of the lakes for the month of August were 81,324,750 feet. This is more by about 22,000,000 feet than was ever shipped from the Duluth-Superior harbor in any month in any year. Duluth shipped 65,417,750 feet and Superior 15,907,000 feet.

The Superior Ship Building Co. has received a consignment of steel ex steamer Norwalk. Keel plates are wanted, as vessels are generally built up, not down. However, the 200 tons will be held until the stuff to fasten it to comes along. The yards and dry docks are left fairly busy, notwithstanding the lack of material.

It is estimated that the water in Superior Bay is at least six inches higher than normal, and many of the institutions along the bay front are suffering. Some of the coal docks are partly submerged while the elevators are forced to use pumps to keep the water out of the lower grain bins. Heavy rains and northeast winds are said to be accountable for the high water.

The excess of iron ore shipments from the head of the lakes over last year up to this time amounts to nearly 750,000 tons or nearly 5,000,000 tons in all, as compared with 4,238,000 last year. It appears fair to assume from the record of ore shipments to date that the head of the lakes will send forward about 1,300,000 tons more than last year, which would make the aggregate for the season about 7,500,000 tons.

The steamer Iron Age, detained here with a loose wheel, left in tow of the Iron Duke, and will make repairs after the cargo is discharged at a lower lake port. To fix the wheel here would have made it necessary to lighten part of the cargo. If the Age doesn't have better luck her new owners won't make such a glaring profit out of the balance of the season's work as was anticipated. This was the second time that she had put back here for repairs on the trip and finally had to be taken in tow.

Capt. Joseph Kidd, of Duluth, representing the owners and H. P. Jones, London Lloyd's surveyor on behalf of the underwriters, held a survey on the steamer Penobscot. About fifty plates had to come off and quite a number of frames were damaged. Capt Kidd is now the best surveyor at the head of the lakes. He is a man of integrity and strictly impartial as between the vessel and her underwriters. The damaged vessel must always be put in the same good order and condition as previous to her casualty, or Capt. Kidd will know why.

The Bessemer line steamer Douglass Houghton cleared from Duluth on Sunday with the barge Fritz in tow, both loaded with iron ore for Lake Erie. The former carried 6,300 and the latter 7,200 gross tons of ore, which is a total of 13,500 gross or 15,120 net tons. The steamer will tow her consort at the rate of ten or 11 miles an hour, making a round trip every 10 days. If the Houghton were transporting wheat at a current rate of 5 cents a bushel her earnings for herself and the barge would be \$25,200.50 for the single passage, providing the vessels carried as much wheat as they are carrying iron ore, which is equal to 504,010 bushels. It is not known what rate these Rockefeller boats are credited with for carrying ore.

One of the features of the month of August was the great amount of rain that fell at the head of the lakes. The average precipitation for the month of August for the past 29 years is 3.21 inches, but August this year showed up 6.18 inches. Forecast Official H. W. Richardson now has a credit of 2.23 inches to the good in precipitation since the first day of January this year. For many years there has been a steady deficiency in precipitation, but now there is a substantial excess. The high stage of water on Lake Superior is accounted for by some observers by the excess in precipitation. The conditions for evaporation have generally not been as good this season as in many former seasons and taken altogether the conditions have been favorable for a high stage of water.

THERE used only to be three L's in the navigator's category, viz., Lead, Latitude, Look-out. H. Phelps Whitmarsh in an article in the September Century adds a fourth and neglects the most important in calling for lead, log, lights, and lookouts. He also suggests adding a fifth L, standing for law. Mr. Whitmarsh has gone to a lubberly length with his L's. Jack would be liable to render his version of L's in something like this way. The law leads, sailors are logged for lighting their pipes on the lookout, after which, they might request to be pricked off on the chart and made light-houses of. Never mind the law, Mr. Whitmarsh, sea lawyers are on a plane with Dick Deadeyes. Attention to the ordinary practices of seamen is all that is wanted, lacking this, trouble is liable to ensue.

BUFFALO.

Special Correspondence to The Marine Record.

Capt. Andrew C. Hansen has been appointed master of the steamer George Spencer, in place of Capt. Archie Williams.

The tug building by Hingston & Son, for Grattan & Lattimer, will be ready for work in about ten days. She will be used to handle freight for the contractors.

The Connelly Contracting Co. are hustling work on their northern breakwater contract, and the entire job will be completed in the specified time, if not earlier.

Geo. E. Lattimer is the name of a steamer, 27 gross and 19 net tons granted official numbers by the Treasury Department this week. She was built and is owned here.

William Leslie, manager of the Collins Bay Rafting Co., has been given the contract for raising the steamer Scottish King, sunk last December, near St. Johns, Newfoundland.

The new steamer Buffalo will be given the Tyzack patent stockless anchors. Messrs. DeGraw, Aymar & Co., New York, are the sole manufacturers of this patent anchor in the United States.

The Great Lakes Towing Co. have increased firemen's wages on tugs \$5 per month, making the pay \$40 per month. This is one of the good results of the combination of tug interests. Better general as well as special service is also likely to follow.

The Maritime Law Committee of the International Conference of jurists, held here this week, worked away on insurance topics, actual and constructive total losses, bills of lading, etc. The meeting at Paris during the exposition will be availed of to determined the questions discussed here.

Capt. McCormick piled the Harlem up on the rocks at Isle Royale last fall and he has this trip just got clear of a stranding job in St. Clair river. Capt. McCormick is a very careful and well known master, too, but there's no telling at what time a streak of bad luck is going to follow a man.

Coal freights kept at 90 cents all last week to Chicago-Milwaukee and \$1 to the minor ports with tonnage in great demand. Shipments up to Saturday aggregated nearly 90,000 tons, Chicago taking nearly 33,000 tons of it; Milwaukee about half that amount, Duluth-Superior the same and the balance scattered. Duluth-Superior, Gladstone, Parry Sound, Port Arthur, Fort William, all paid 60 cents; Marquette, 65 cents; Port Huron, 50 cents.

Capt. Robert Murray, formerly master of the steamer Mohawk of the Western Transit Co. will sail the new steamer Buffalo, he has been 17 years with the company, though the ground work of his ability was formed on salt water. Other changes are as follows: Capt. McCormick of the Harlem goes in the Arabia; Capt. Davis of the Arabia will sail the Chicago; Capt. McCabe of the Chicago will take charge of the Boston, and Capt. S. R. Jones will look after of the Mohawk.

The steamer George Spencer was just ready to come out of the Mills dry dock, after having the damage repaired, caused by her consort, the B. L. Pennington running into her, when the dry dock caught on fire, badly scorching the Spencer and Ionia. As regards the dry dock, Mr. M. C. Mills, president of the company, says the loss will not exceed \$10,000, fully covered by insurance. The buildings containing the machinery were entirely consumed and the fire will prevent the Mills Dry Dock Co. from doing their usual amount of work for some time.

Edward S. Gaskin, superintendent of the Union Dry Dock Co., takes exception to the Evening News printing an article under the caption of "Baptism of blood for the steamer Buffalo," when describing her launch last week. One of the workmen was badly hurt during the launch, but Mr. Gaskin in his letter to the Evening News, only speaks of a "too strong" fence that was washed away, and says that the next one is only to be half as heavy. Seems to me though that the "too strong" fence wasn't strong enough, without threatening to make it half as weak again if there is to be another launch.

A naval shipping station is to be established at this port on a permanent basis. The officer detailed to begin the work is Mr. R. M. Russell, Lieut. U. S. N. formerly of the receiving ship Vermont, Brooklyn Navy Yard. Collectors of Customs at lake ports usually knew nothing and cared less about the naval routine for shipping men. With a regular station in full swing all the year round and the fact made known, any amount of the brawn and sinew of the western country can be used to make "Jackies" of. Lots of the strapping fellows want to join the navy, but they can't always learn how, when or where.

The new steamer Buffalo reached the water last week, if such may be considered a successful launch. The operation nearly killed a man though, just as might have been expected when so large and costly a vessel as she is, attempted to float without being christened. The Union Steamboat Co., a branch of the railroad company, built her at the Union Dry Dock Co., for their lake route to Chicago, and while it is not thought that she strained herself in any way, or even started a rivet, yet the launch was not as smooth as lake launches usually are. The Courier says: "It is the general belief that the vessel began to move prematurely. The stern of the steamer suddenly began to descend and had nearly reached the lower end of the ways when the bow gradually started to slide. The stern struck the water first and when the bow went in the vessel careened slightly." Unlike an end launch, both ends usually move horizontally in a side launch. It may be that this was a composite process, something alike to betwixt and between the two old ways.

DETROIT.

Special Correspondence to The Marine Record.

Senator McMillan's yacht Idler has returned from a Lake Superior cruise.

Notwithstanding the tariff of \$2 per M feet on lumber shipped from Canada the trade is on the increase again.

Our people are appreciating the river excursions more every season. Labor day was a hummer for the passenger boat business.

The engines, boilers, shaft, screw, etc., have been removed from the burned hull of the Aurora and she will be converted into a tow-barge.

Henry McMorran will take Capt. Alvin Neal's place as manager of the Port Huron Ferry Co. and the different lines of boats managed by the deceased vesselman.

Some owners are now guessing that J. C. Gilchrist really knew what he was about in purchasing the City of Rome here last week for \$56,000. It is now said that she will pay for herself inside of a year. Tonnage is already being dickered for on next season's work.

The Canadian schooner Lisgar, Buffalo to Depot Harbor, with coal, in tow of the Clinton, is reported lost off Goderich through stress of weather. The steamer and another consort sought shelter at Goderich and made the above report. Nothing is known about the crew of the Lisgar.

Capt. James Davidson is going right ahead building wooden vessels, steamers and consorts. The Davidson shipyard has an unlimited supply of first-class timber and is not squeezed like other yards are by the iron and steel combine. There is money yet in first-class wooden bottoms.

The 50 foot steam launch Degh, hailing from New Orleans, La., passed down this week on her trip from the Mississippi via the lakes, Erie canal, to the Hudson river and thence to her destination, viz. her port of hail. The owner, Mr. E. W. Deming and his two daughters report a most enjoyable cruise so far.

The tow line of the barge Sunshine parted on Sunday as she was towing past Port Huron. The end recoiled aboard the barge and struck two sailors, Jno. Flynn, of Detroit, and John Murray, of Alpena. Flynn had one leg broken and both of Murray's legs were broken and he was injured internally. Both men are at the Marine Hospital, Port Huron.

The Buffalo built yacht Enquirer formerly owned by W. J. Connors and purchased by the government for service during the brush with Spain is receiving a new Almy water tube boiler at Providence, R. I. She will then come on to this port via the St. Lawrence system of canals and engage in lake survey duty in the department of the Corps of Engineers, U. S. A.

The little schooner Nellie May was dismasted off Lexington, she was abandoned by her crew, anchored, with the loss of her deckload of cedar posts, the yawl boat hanging in the davits and flying a distress signal. Her flag was at half mast but there was no one dead or alive aboard of her, the crew having been taken off by a passing steamer. A tug was sent for her and she has towed to Port Huron.

The Cleveland owners of the new steel steamer Angeline, launched on Saturday last, knew well what they were about when they took over the contract for the vessel after the keel had been laid for another firm. The transfer of ownership was a good thing for the Presque Isle Transportation Co., as the vessel could not now be duplicated at a 25 per cent. advance on her contract price and very probably not at a 50 per cent. advance, if at all. Steel is steel these days, or silver, and vessels built from that material are correspondingly valuable.

We have the old story this week of consorts running down their towing steamers, we had about got clear of this evil and but few cases of damage from this cause had been noted for the past season or two, but we are again picking up the old fashion. A couple of weeks ago we had a whale-back sunk in the St. Clair river, this week the tow-barge Marcia wallowed into the stern of the Mariposa, and the finale took place in the "Soo" river when the steel tow-barge Fritz walked into the Douglass Houghton, on Tuesday, Hobsonizing her at Sailor's Encampment and placing an embargo on all Lake Superior traffic until she is removed.

Michigan lumbermen who own timber in Ontario have united in a petition to the high court of justice in Toronto to have the regulation forbidding the exportation of logs set aside as unconstitutional. The petition sets up that the supplicants purchased their timber land prior to the passage of the act, and adds damages for the loss sustained since the law has been in force. The beginners of the suit are Robert W. Smylie, auditor of the People's Savings bank, Detroit, representing the lumbermen, and the Canadian Bank of Commerce, of Toronto, the latter acting in the capacity of trustee of the grants. Canadian attorneys are prosecuting the case for them.

Civil Engineer Lyman E. Cooley, of Chicago, in speaking of the opening of the big drainage canal in its relation to the lake levels, states that the probable lowering of the level is about two to four inches, which he says is insignificant, as compared to the fluctuations between high and low water in the wet and dry seasons, and he adds that the casual observer will not be able to distinguish any difference in the depth of the water. It is very aptly said by one commenting on the matter that the vesselmen who have millions upon millions of dollars invested in the lake interests are hardly to be classed as casual observers, however, and from them is coming the objection to the project.

CHICAGO.

Special Correspondence to The Marine Record.

The yacht Starlight, belonging to Chicago parties, was wrecked about three miles off South Haven, early Sunday morning, in a squall. She left the harbor for Chicago in a stiff northwest wind. The squall carried away both topmasts and rails. After some difficulty all of the persons aboard were rescued by the life-saving crew.

This is not a strictly marine item, but it is just as well for lake sailors to know that the longest street in Chicago is Western avenue, 22 miles in length, the next longest is Halsted, 21½ miles in length. Any one losing their bearings may be a long way from home and yet live on or near to either of these highways of commerce, trade and residence.

THE RECORD said, an issue or two ago, that Capt. James McBrier, of Erie, Pa., was to be congratulated on not having chartered any of his tonnage ahead. It is now reported that he has fixed the steamers Uganda and Tampa from now till the close of next season, for the net sum of \$95,000, charterers to pay all disbursements, including insurance, and to close the charter, with the vessels in like good order and condition that they are now in.

Dredgers at work on the Calumet river at South Chicago are ignoring the order against dumping inside of an eight-mile limit. If called to account they say that they will dump just over the Indiana line, which is but a trifle longer tow than the present one. Work on the river is progressing rapidly. The channel from One Hundred and Sixth and One Hundred and Eighth street, has been widened to 200 feet, with a depth of twenty feet.

Capt. George B. Mallory, senior master of the Minnesota Steamship Co., of Cleveland, when in Chicago, expressed the opinion that there will be a combination to control lake shipping, and that it will result from a working agreement among three leading companies. While he admits that the affair is a most gigantic one, he nevertheless believes that it is feasible. There is no poetry in such a statement, or combination of interests, but, I wouldn't wonder if there was some shadow of truth in it, if only on the ground that white sheep eat more than black ones.

Chicago has not a vast quantity of what might be called a foreign trade, but last year, including the winter months, when the lake commerce is practically ice-bound, we entered and cleared a total of 18,990 vessels, having a tonnage of 15,243,663. The foreign commerce of New York City for the year showed a total of 12,234,823 tons, following close on London with 13,638,256 tons. I have noticed in the foregoing the difference between the foreign and total commerce, perhaps the totals in New York City and London might also show a vast difference in the figures given above.

It is now quite evident that from this time forward coal shippers will need to figure on paying some sort of freight for transporting coal. It has not yet dawned upon Ohio shippers that steamers with a six feet water bottom are not beholden to them for dry ballast. Coal shippers, like all other interests, must expect changes and be prepared to meet them. Hitherto, the vessel part of it was their least consideration, the railroads claimed their attention. We want coal for the western, also for our local supply, and are willing to pay vessels for bringing it here, a fair division of profits and fair pay for service performed works injustice to no one.

The sloop-rigged yacht Gloria, 6 tons, built here this season has been assigned an official number by the Bureau of Navigation, Treasury Department, Washington, D. C. All craft of 5 tons and upwards are assigned official numbers according to the act of Congress, and tonnage built years ago is thus being enrolled. One result of this is that we will have an amazing showing in the aggregate tonnage of our merchant marine, including scows, barges, yachts, and a miscellaneous raft of bottoms that practically amount to nothing in the carrying trade so far as commerce is concerned. The Nellie B., a small steamer of 11 tons, built last year, has also been given an official number.

Capt. J. S. Dunham who returned from Cleveland on Wednesday announced the final sale of the Dunham Towing & Wrecking Co. of Chicago and the Hausler & Lutz Towing Co. of South Chicago to the Grent Lakes Towing Co. The terms on which the two companies were sold Capt. Dunham does not say. The company will retain its interest in dock building and public work. The sale will mark the retirement of Capt. Dunham from Chicago river towing. He has been a tug owner here since 1856, with the exception of a short time spent in the south. Not one of his early associates remain on the river. W. A. Collier, general manager of the tug trust is here with an adjuster from the home office. The final papers for the transfers will be passed within a week.

Mr. J. S. Van Epps, Cleveland, O., sales agent of the Delaware & Hudson Co., was in Chicago this week, and made a pleasant call at the offices of his trade paper, The Black Diamond. During a conversation Mr. Van Epps remarked: "The pessimist to-day is on the back seat; the optimist is having his fling and I'm glad of it. The man who a year ago would have dared to prophesy present conditions would have been put down as a fool, or stark mad. Who would have the nerve to predict a 90-cent rate on coal from Buffalo to Chicago and Milwaukee; \$1.60 per ton on iron ore from the head of the lakes; 4½ cents a bushel on grain from Duluth, with about half a dozen cargoes for every boat offered? A year ago it was planned to tie up these boats so as not to demoralize rates. Who would have

predicted a partial shut down of Cramp's big ship yards because of lack of, and inability to get raw material? Six months ago the consolidation of the Pittsburg soft coal producers was pooh-hoohed and laughed at, to-day it is an accomplished fact, with prospects of paying good dividends on over sixty million dollars capital stock. Anthracite coal is sharing in these improved conditions. The man who, three months ago, was afraid to put in any stock, predicting prices would not be maintained, and that he would buy his coal cheaper in September than in May, is now paying the advance on coal, and worrying as to whether he will be able to get in his supply at any old price. The pessimist from his back seat would like to say: 'We have reached high water mark and disaster is ahead of us.' But with unfilled contracts running way into the future, tonnage up and down our Great Lakes that will have to be carried over to next year's business, I can't see where we are going back to ebb tide for some time to come—not this year or next certainly."

CLEVELAND.

Special Correspondence to The Marine Record.

Capt. J. S. Dunham has closed out his tow boat interests at Chicago to the Great Lakes Towing Co.

The Fritz, consort to the Houghton, has been hauled clear of the steamer, and is undergoing temporary repairs to her bows.

This week Capt. Dunham, Chicago, came to time and his fleet is now owned by the Great Lakes Towing Co. Tuesday at this port settled the question.

Capt. J. R. Owen has been appointed master of the steamer City of Rome, recently purchased by J. C. Gilchrist. Last season he was on the steamer Ira H. Owen.

And now there is some talk of a shipyard plant being established at Sandusky, O. Mr. J. C. Gilchrist and the Sandusky Chamber of Commerce are mentioned in the negotiations.

The steamer W. H. Gilbert, Mitchell & Co., managing owners, passed through the old Canadian channel, east of St. Joseph Island, drawing 13 feet 8 inches. The Susan E. Peck blocked the "Soo" river last, in 1891.

There was a couple of changes in masters here this week. One was Timothy Carbine, qualifying as master of the tug J. R. Sprinkle. The other was William E. Moore, master of the steamer Ohio, hailing from Fairport, O.

Mr. L. M. Bowers, general manager of the Bessemer Steamship Co., received a dispatch from Capt. Byrns, master of the steamer Houghton, on Wednesday stating that he expected the steamer would be afloat in four days.

The Cleveland Plain Dealer man in getting out his port list calls side-wheel boats, steamers, and screw boats, propellers, sometimes though a boat propelled by a screw wheel, gets placed in the list of steamers which I suppose is according to Gunter.

Mr. Chauncey A. Morgan, for several years, past manager of the Cleveland Tug Co., will probably take a position with the L. P. and J. A. Smith Co. Mr. Morgan has had a long experience and possesses an intimate knowledge of local marine affairs.

The tug Red Cloud built in Buffalo in 1882 and recently purchased by the Great Lakes Towing Co., was lost off Cedar Point on Sunday night, all hands were saved after several hours' exposure. It is refreshing to learn that the captain of the tug takes the blame on his own shoulders and admits that the loss of the tug was through his own error.

Last Sunday's blow caused some trifling damage around the lakes but a very serious one was the loss of the Canadian schooner Lisgard on Lake Huron, with all hands. The tug Red Cloud was lost off Sandusky, Lake Erie besides a dredge and scows sunk off Fairport. There were several minor casualties, but the sinking of the Douglass Houghton in the "Soo" river caused the greatest financial loss.

Conneaut is by no means slow in handling bulk cargoes. The latest record shows 5,700 tons of iron ore discharged from the Andrew Carnegie and loaded into railroad cars in the brief space of 8 hours 45 minutes. It is questionable if there is any other port on the face of the earth that can handle ore as expeditiously as this, or rather, there is no question about it, for outside of lake ports, and ports on Lake Erie in particular, half the work could not be done in double the time.

That defective link in the Douglass Houghton's wheel chains has been blessed (?) from Dan to Beersheba this week. The same accident has happened before, though. An owner who had just fixed a Lake Superior charter at the best rate on grain felt a trifle hot under the collar when he told me that the cost of that infernal wheel chain would have paid a season salary for half a dozen inspectors of wheel chains. Too many inspections, and private, public or government interference should not be courted very strongly either.

Although shippers have had much trouble getting vessels, and freight rates were advanced steadily, the movement of iron ore during August was 100,000 tons larger than it was in July, and the heaviest for any month on record. Shipments for August were 3,007,207, making the total shipments for the season up to Sept. 1, 10,646,913 tons, compared with 9,142,449 tons for the same time in 1898, showing an increase of 1,554,464 tons over last year. There is little doubt now that the 15,000,000 ton mark will be reached, even if the stockpiles of ore at the mines are running low.

Capt. Ben Tripp, who for a number of years was pilot on the Beatty line of steamers, says he can take boats through the Canadian or Bruce Mines channel drawing 17 feet of water. Consorts, he says, would have to take tugs in order to make the sharp turns. Capt. Tripp navigated the Canadian channel for five years, and he is satisfied he can take the Lake Superior traders through without trouble. Some of the owners will take the matter up with Capt. Tripp from a pilotage standpoint.

Cleveland coal shippers felt compelled to pay the 90 cent rate to Lake Michigan although they squirmed and fought as hard as they could against paying any such a figure. They have been used to be toadied to by vesselowners and had their coal carried almost gratis season after season, now, that they are asked to pay freight for transporting the merchantable commodity, they are lost in a blaze of amazement and partly consider that they are laboring under an unnatural hyponotic spell.

Cleveland is in a muddle about the lake front and river improvements, but the adjoining and minor ports are going ahead with their work in proper shape. Proposals have been advertised by Colonel Jared A. Smith, Corps Engineers, U. S. A., in charge of this district, for work to be done in the harbors of Lorain, Port Clinton and Monroe. At Lorain the channel is to be dredged to a uniform depth of twenty feet. The work involves the dredging of 230,000 cubic feet. At Port Clinton the stone work on the piers is to be repaired, and at Monroe the channel is to be dredged to a uniform depth of fourteen feet. It is suicidal for Cleveland not to enter heartily into the work of dredging, deepening and otherwise improving the river and harbor at this port.

At last we have a weather man who can believe that the lake has some influence over local indications, but it took the bicycle people to get it from him, in this strain. Many Cleveland wheelmen have remarked that there is a regularity in the change of the wind in Cleveland, and the more experienced riders take advantage of this fact. Cleveland riders say that in the morning, as a rule, the wind blows from the west, while in the evening an east wind is the rule. For this reason, the ride to Geneva is more popular this season, than the Elyria trip. Forecaster Kenealy explained the change to a "Press reporter. Tuesday. He said: "During the summer months, and when local conditions are dominant, there is a daily shift of wind at lake and seacoast stations, due solely to the influence of the adjacent water, as compared with that of the land temperature. At Cleveland, between 9 and 11 a. m., the land becomes much warmer than the lake, and the air therefore tends from the latter to the former. Soon after sundown the reverse effect takes place, owing to the much more rapid loss of heat by the land. In consequence the wind blows from the land to the lake as a south-east or south wind." Let's hear from another lake forecaster now. Mr. Kenealy is the right man in the right place, there's no buncombe about his work.

FLOTSAM, JETSAM AND LAGAN.

During August, five large rafts of logs from Canada, aggregating 13½ million feet of lumber, valued at \$140,000, entered at Bay City and paid the \$2 per M feet tariff.

The old warship Victory was forty years old when she took part in the battle of Trafalgar and she is now lying in Portsmouth harbor. This would put her age at about 135 years.

The owner of the six-masted schooner building at Camden, has finally, after much controversy, decided to name the spars of the vessel fore, main, mizzen, jigger, spanker and driver.

Iron steamers were first built in Great Britain in 1843. The Great Eastern was launched in 1858 and it has taken 40 years for a duplication of her dimensions as now afloat in the White Star Atlantic line steamer Oceanic.

The sailors and firemen of the United Kingdom threaten a general strike and a consequent tie up of shipping. With a few more labor troubles accompanied by loss of trade the old country won't be in it and the United States can then take the whole cake.

One of the reasons why the screw propeller did not supersede the paddle or side wheel more rapidly in the Atlantic trade than it did, was on account of the British government refusing to sanction the carrying of the mails in screw propelled vessels until the year 1862.

It proved a costly experiment to take the lake built steamer Mae to the coast through the St. Lawrence rapids. Capt. T. Donnelly, inspector for Lloyd's at Kingston, Ont., has received a letter from Miller, Bull & Knowlton, owners of the Mae, stating that the damages in the St. Lawrence will be fully \$30,000. She is now in drydock at New York. Sixty plates and twenty frames were removed from the bottom, and thirty-eight were replaced by new ones. The Craig Ship Building Co., at Toledo, guaranteed delivery on the coast, and must pay the cost of repairs.

Mr. B. Martell, chief surveyor to Lloyd's Register, London, has resigned his position after a life time spent in the service of the company. Mr. Martell is universally and favorably known as a man of sterling character and integrity. Technically, he had long ago reached the top of the tree, it is safe to say that there is no man living better posted in general maritime affairs and in marine architecture and equipment in particular. All men who ever had the acquaintance of Mr. "Ben" Martell will wish him to live the best portion of his life in its autumn and his retirement from active service.

OUR NEW NAVY.

The number of warships now in course of construction exceeds anything to be found in the annals of the American Navy. Sixty-one vessels of various classes are at present either in design in the hands of the Navy Department or in actual course of building in the several yards which are equipped for the work of constructing naval vessels.

The list is headed by eleven battleships: Kearsarge, Kentucky, Illinois, Alabama and Wisconsin, each of 11,525 tons displacement and 10,000 horse-power; Maine, Missouri and Ohio, each of 12,500 tons displacement and 16,000 horse-power, and Georgia, New Jersey and Pennsylvania, each of 13,500 tons displacement and 18,000 horse-power.

Ten cruisers follow. These are California, Nebraska and West Virginia, all three armored and designed for high speed with 23,000 horse-power; Albany, a sister ship of New Orleans, building in England; and six smaller vessels of 3,100 horse-power. Chattanooga, Cleveland, Denver, Des Moines, Galveston and Tacoma.

For coast defense purposes there are four large monitors: Arkansas, Connecticut, Florida and Wyoming. Plunger, a submarine boat, Chesapeake, a sailing vessel destined for the instruction of the cadets at the Naval Academy, and a small light-draught gunboat, as yet unnamed, are also included.

In the field of torpedo warfare, the United States is making great preparations. Twenty-six destroyers and seven torpedo boats are on the ways. These extraordinary little vessels, the largest of which has 433 tons displacement and 8,300 horse-power, are named after men whose deeds have made the navy famous. The roster of names is really a historical panorama of the service: Bainbridge, Barry, Chauncey, Dale, Decatur, Hopkins, Hull, Lawrence, Mac Donough, Paul Jones, Perry, Preble, Stewart, Truxton, Whipple, Worden, Dahlgren, Craven, Stringham, Goldsborough, Bailey, Barney, Bagley, Biddle, Blakely, De Long, Nicholson, O'Brien, Shubrick, Stockton, Thornton, Tingey and Wilkes. It is a democratic list with midshipmen and admirals, explorers and navigators, fighting men and thinking men shoulder to shoulder—heroes all.

LONDON LLOYD'S.

London Lloyd's, as universally known, is an association of underwriters, each of whom conducts his business according to his own views. For those views or for the business transacted by individual underwriters, Lloyd's, as a corporation, is in no way responsible, except that the committee of Lloyd's, before the election of any underwriting member requires that the candidate shall place in the hands of the committee security to meet his underwriting liabilities. For many years this custom has prevailed, and the total securities thus placed at the disposal of the committee of Lloyd's amounts to over \$20,000,000. It is difficult to estimate the value of property annually insured by Lloyd's, but it probably amounts to about \$2,000,000,000.

The name of Lloyd's is derived from a coffee house kept by Mr. Edward Lloyd in the 17th century. In 1692, Lloyd's coffee house moved from Tower Street to Lombard Street, London, where it became the center of shipping and underwriting business.

The corporation has now its agents in every port, and there is no line of sea coast in the whole world which is not watched by some representative of Lloyd's.

OUR EXPORTS.

The recent increase in our exports and the vast excess of exports over imports has caused much "glorification" and a great deal of mock sympathy with Great Britain upon her "vanishing trade." Nevertheless, Great Britain is not without consolation. During the year 1898, as shown in recent dispatches, we bought merchandise from the United Kingdom amounting in value to about \$109,000,000 and sold to that country goods valued at over \$540,000,000. Of this vast export all but \$200,000,000 worth, namely, about \$340,000,000, was bread-stuff, cotton and other farm products, and not manufactures, leaving an excess of manufactures exported of about \$90,000,000, which represents iron, steel and petroleum.

On the other hand, according to an official estimate made in London, there are 70,000 American tourists now in Europe. It is also estimated that they will spend on the average about \$1,500 each, or a total exceeding \$100,000,000. A great part of this sum will be spent in Great Britain. When we add to this the sum that we must send to Great Britain annually to pay freight on our exports and interest on British gold invested in this country, we are forced to

the conclusion that our sympathy for England may be misplaced. Still it is cause for congratulation that, notwithstanding the fetters of tariffs and archaic navigation laws with which our trade has been trammelled, it can still invade the markets of the world. A few years ago the "markets of the world" was the special object of the scorn and ridicule of the high-tariff shrieker.

GENERAL AVERAGE.

The whole principle of general average is that of the proportionate payment by the parties interested in the ships freight and cargo, of either sacrifice or expenditure incurred at a time of peril for the general benefit.

An eminent jurist gives a particularly clear example of this principle in a few words, quoting and translating an extract from the Rhodian law:

"Concerning the Rhodian law of jettison, by the Rhodian law, care is taken that, if for the sake of lightening the ship a jettison of merchandise is made, that which is given for all shall be made good by a contribution of all."

The York-Antwerp rules of general average is the code usually followed at this time.

LAUNCH OF THE ANGELINE.

The large steel cargo steamer Angeline built at the Wyandotte yards of the Detroit Ship Building Co., to the order of the Presque Isle Transportation Co., Cleveland, W. G. Mather, manager, was successfully launched on Saturday afternoon, Sept. 2, and later towed to the works at Detroit, to receive her engines, boilers and equipment.

The general dimensions of the Angeline, or number 132, as she was known in the shipyard, is 435 feet over all, 50 feet beam, and 28 feet molded depth. Engines, triple expansion, 1,450 horse-power, diameter of cylinders 22, 35 and 58 inches, by 42 inches stroke. Boilers, 2 Scotch type, 13 feet 2 inches in diameter, by 11 feet 6 inches in length, fitted with the Howden hot draft.

In equipment, the Angeline will be given every improvement for the facility of handling ship and cargo. An electric light plant will be installed, steam steering gear, capstans, deck winches and all that goes to complete the outfit of a modern, high classed lake cargo steamer. The addition of each craft like the Angeline to the lake fleet is a subject of congratulation to the builders and owners, besides being of paramount importance to general transportation interests and of direct benefit to the community of lakefarers.

ASTRONOMICAL DATA FOR SEPTEMBER.

Astronomical data for September, 1899, furnished the MARINE RECORD by the Washburn observatory: Mercury may be seen as a morning star during the first week of the month, since it reaches greatest elongation west, Sept. 5, and rises a little farther north than the sun and about one hour and a half earlier. After that date the planet will rise later and later until on Sept. 30 it reaches superior conjunction and ceases to be a morning star. Venus will be too near the sun throughout the month to be visible. The planet passes through superior conjunction Sept. 16, and will appear next as an evening star. Mars, Jupiter and Saturn are all visible in the evening sky. The first, however, sets very early in the evening, and Jupiter also is low in the southwest. Saturn is more favorably situated for observation, being near the meridian at sunset, though at a low altitude.

The times of sunrise and sunset for the month at Milwaukee are as follows:

	SUNRISE.	SUNSET.
Sept. 1.....	5:15	6:27
" 11.....	5:26	6:09
" 21.....	5:37	5:51
" 30.....	5:47	4:35

The times of the moon's phases are:

New moon.....	Sept. 4, 9:33 p. m.
First Quarter.....	" 12, 3:09 p. m.
Full moon.....	" 19, 6:31 a. m.
Third Quarter.....	" 26, 9:03 a. m.

The principal fixed stars visible during the month in the evening hours are: To the west; Arcturus and Vega; near the meridian, Altair; to the west the bright stars of the Square of Pegasus, and of the constellations Andromeda and Cassiopeia.

To Fit the Crime.—Lord Russell, of Killowen, years before he took the sack, was sitting in court, when another barrister, leaning across the benches during the hearing of a trial for bigamy, whispered, "Russell, what's the extreme penalty for bigamy?" "Two mothers-in-law," replied Russell, without hesitation.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD).

Collision—Measure of Damages—Demurrage.—The owners of a vessel injured in a collision during a voyage are not entitled to recover demurrage for the time the vessel was delayed for making repairs, where they suffered no actual pecuniary loss from the delay. The Saginaw, 95 Fed. Rep. (U. S.) 703.

Seamen—Damages for Personal Injury—Liability of Vessel.—While the sixteenth admiralty rule protects a ship from liability for damages for assaults committed by her officers, she is liable for injuries inflicted on a seaman by reason of neglect of the master to protect him from continued abusive treatment by a subordinate officer. The Marion Chilcott et al., 95 Fed. Rep. (U. S.) 688.

Liability of Owners—Negligence Causing Death on the High Seas.—The law of the forum controls in determining the question of the liability of the owners of a vessel, who are citizens of the United States, for damages for negligence resulting in death on the high seas; and, where the statutes of the State give a remedy for the tort, such remedy is enforceable in a court of admiralty. In re Pacey et al., 95 Fed. Rep. (U. S.) 693.

Failure of Master to protect Seamen.—The rule that a ship is not liable to a seaman in damages for injuries resulting from negligence of the officers is not applicable when such negligence amounts to a breach of duty; as where the master fails to protect the seaman from continued violence and brutal treatment at the hands of a subordinate officer. The Marion Chilcott et al., 95 Fed. Rep. (U. S.) 688.

Liability for Damage to Goods—Measure of Damages.—Where goods damaged in shipment, for which damage the ship is liable (the invoice value being made the basis of settlement by the bill of lading), are sold on their arrival, the freight paid thereon or due should be deducted from the proceeds, and the remainder only credited to the carrier against the invoice value, to determine the amount of his liability. The Styria, 95 Fed. Rep. (U. S.) 698.

Claims for Death and Personal Injuries.—Claims for injury to the person and loss of life resulting from a collision are within the provisions of Rev. Stat. Sec. 4284, 4285, which require the proceeds of the offending vessel, when surrendered, to be distributed among the claimants in proportion to their respective losses, and bar the claimants of other remedy; and the effect of those provisions is to make every admissible claim a statutory lien on the fund, and entitled to share therein pro rata, except as affected by equitable rights between the parties. In re Central R. Co., New Jersey, 95 Fed. Rep. (U. S.) 700.

Collision—Mutual Fault—Limited Liability Act.—Distribution of Proceeds.—Where both vessels are held in fault for a collision which resulted in the loss of one vessel, and in the death and injury of passengers, and the loss of baggage and cargo, for which claims are filed, and the proceeds of the other vessel, surrendered under the limited liability act, are insufficient to pay all losses, the owners of the vessel destroyed are equitably estopped from claiming any part of the fund on account of the loss of the vessel until the claims of third parties, for which she is jointly liable, have been paid in full; and her insurers, who have paid the loss, are subrogated only to the rights of the owners. In re Central R. Co., of New Jersey, 95 Fed. Rep. (U. S.) 700.

Towage—Liability of Tug for Injury to Tow—Action in Emergency.—As a tug was entering Boston harbor with a tow, in a fog, which had lightened sufficiently, however, to enable the master to keep the channel, she suddenly came upon a rock-breaker anchored in the channel, which had given no signal, though the tug had approached slowly, continually sounding her whistle. The rock-breaker had been recently removed from the east side of the channel, where it had been at work for some time, too near the west side, which fact was unknown to the master of the tug, who, as he could not see the shore, supposed it to be in the old position, and, therefore, changed his course, and attempted to pass to the west of it, in doing which he grounded, and one of his tows received injury. Held, that such facts did not establish negligence in the master, or want of ordinary nautical skill and prudence, but, at most, an error of judgment in an emergency, which did not render the tug liable for the injury. The Taurus, 95 Fed. Rep. (U. S.) 699.

Shipping—Extra Hire—Risks of Delay.—A charter of a vessel for a term of three months to be sent to any ports in designated countries at the option of the charterer provided for the payment of monthly hire based on her tonnage, payable semi-monthly in advance, and for the same rate for any part of the month, "hire to continue until her delivery," and that, should the steamer be on her return voyage towards the port of return delivery at the time a payment of hire became due, such payment should be made for the estimated time before delivery and afterwards adjusted. Held, that such provisions contemplated the use of the vessel by the charterer for at least one complete voyage, taking any customary return cargo from the customary ports at a charter rate of hire, where a prolongation of such voyage beyond the charter time was not due to any negligence on the part of the charterer; each party taking the risks of delay from causes beyond the control of either. Straits of Dover S. S. Co., Limited, vs. Munson, 95 Fed. Rep. (U. S.) 690.

SOME ASTRONOMICAL NOTES FOR
SEPTEMBER.

(COMMUNICATED.)

The number of clear evenings during the past month has been unusually large, and thus favorable opportunity has been given to all who wish to study the heavens, and to renew their acquaintance with the starry hosts. And what more fascinating and ennobling study can be found! What is better calculated to cause one to forget the cankering cares of life or its petty vexations than to go forth under the starry vault and listen to the teaching of the silent stars. At such time, if ever, one can understand the meaning and catch the melody of the "music of the spheres." The earth in her unwearied journey around the sun causes all the visible constellations to seem to drift to the west, and hence some are constantly disappearing below our horizon and others are coming into view in the east. Since last report Regulus in Leo has thus passed from our view and Spica in Virgo is too near the horizon to be easily seen, and will soon enter the realm of continuous day.

Antares in Scorpio is low in the south-west, but will continue to be visible in the early evening for most of the month. Arcturus in Bootes is slowly sinking toward the horizon in the north-west but will continue to be the brightest star in that part of the heavens during September. Vega in Lyra is just west of the meridian in the early evening. Altair in Aquila is now passing the meridian and hence is seen at its best. The brilliant Capella is the only first magnitude star now visible in the north-eastern heavens.

Among the constellations now prominent in our evening sky, that can claim no first magnitude star may be mentioned Cygnus, the Swan, in the midst of the Milky Way now nearly over our heads, and toward the south near the meridian is Sagittarius the Archer with his drawn bow and well-poised arrow apparently ready for the autumnal chase. Toward the east, midway between the horizon and zenith the great square of Pegasus may be found, whose diagonals, at present, are respectively nearly perpendicular and parallel to the horizon. Later in the evening toward the south-east the first magnitude star Fomalhaut, in the Southern Fish, may be seen coming into view. We welcome the return to our evening sky of the Pleiades and Hyades as we would welcome familiar friends.

Though no planet adorns the morning sky, it is still very beautiful by reason of the presence of most of the brilliant winter constellations, and they present a galaxy of brilliancy and beauty when seen in the clear morning air that well repays the early riser for the sacrifice of his morning nap. They may be seen on any clear morning after three o'clock and before the sun puts out the stars.

Mercury will be at his greatest apparent distance west from the sun September fourth, and may be visible for a few days near that date. Venus passes superior conjunction behind the sun September 15, and becomes the evening planet once more, though we shall not be likely to see her before the early days of November.

Mars will apparently be near neighbor to Jupiter during the month, but he will not be conspicuous, if visible at all, by reason of his great distance from us and the strong twilight with which he will be obliged to contend.

Jupiter is in Libra and will only be visible in the early evening and will then be too near the horizon for satisfactory observation through the telescope. Saturn is still in favorable position for observing, just west of the meridian, early in the evening and will continue to be accessible during September.

The full moon in September is known as the harvest moon and as it occurs so near the time of the equinox it is expected to furnish more beautiful evenings than usual, even surpassing the late August moon in this respect.

After the twenty-second the night will be longer than the day and the length of the former will continue to increase and that of the latter to diminish, as the sun slowly sinks toward the south and the mid-day shadows lengthen.

Not a single spot has disfigured the fair face of the sun during the past month—quite an unusual record.

D. SATTERTHWAITE.

Toledo, Ohio.

THE COMMERCE OF BUFFALO.

In response to an inquiry from the MARINE RECORD, Mr. Chas. H. Keep, secretary of the Buffalo Merchants' Exchange thus figures the total commerce for last year and valuation of same at that port.

"The total vessel tonnage in and out of Buffalo for the year

1898 was 12,020,721 tons, and if Tonawanda were included this amount would be increased to 13,129,135 tons. There is no compilation which shows the total value of the cargoes carried in and out of this port. There is no port on the lakes which handles so much miscellaneous package freight, and probably the carriers themselves could not come anywhere near estimating the value of these cargoes if they tried. I know of no better method than to estimate it on the basis of about 1 2/3 tons of cargo to each ton of vessel entrances and clearances, and taking the average valuation (\$11 per ton) used by the "Soo" canal authorities in estimating their business for 1898. On this basis the cargo tonnage in and out of Buffalo and Tonawanda for 1898 was 21,881,891 tons, and its value was \$240,700,801."

A DECISION IN MARITIME LAW.

In the matter of a claim for demurrage, Assistant Comptroller Mitchell, Washington, D. C., has just decided that unfavorable weather which prevents a shipper from furnishing cargo according to the terms of a charter party, is no defense in a claim for demurrage for delay in loading caused thereby, and also that unusual stress of weather which prevents the furnishing of a cargo, and also renders it impossible for the vessel to receive cargo, is a sufficient defense against a claim for demurrage for the delay thus caused.

SOUTH AMERICAN MARITIME ENTERPRISE.

The various governments of South America are at the present time becoming more and more interested in the question of steamship communication with the outside world and with each other. Brazil has just subsidized a new line of steamers to run regularly between New York and Para. A movement is also on foot to organize a line running between Chilean ports on the Atlantic coast.

This is the best thing that could happen for Latin America. Regular steamship lines will turn travel in that direction. Commerce will flow in the wake of the steamers and a brighter condition of trade will result. The main reason that Mexico is so far advanced along progressive lines, is the fact that she has constant and quick communication with this country, and the maritime enterprise displayed by the South American governments will more than repay itself.

THE WORLD'S TONNAGE.

The number and tonnage of steam and sailing vessels owned in each country according to Lloyd's Register of British and foreign shipping, is as follows:

FLAG.	No.	TONS.
BRITISH { United Kingdom.....	9,044	12,587,904
Colonies.....	2,099	1,077,408
America, United States of.....	3,150	2,448,677
Austro-Hungarian.....	284	349,814
Danish.....	760	422,856
Dutch.....	383	444,450
French.....	1,151	1,179,515
German.....	1,604	2,113,981
Italian.....	1,162	855,478
Norwegian.....	2,663	1,643,217
Russian.....	1,159	594,434
Spanish.....	712	621,143
Swedish.....	1,373	552,785

The tonnage given is gross for steam vessels and net for sailing vessels. Vessels under 100 tons are not included in these returns.

THE "SOO" WATER POWER.

The Lake Carriers' Association has sent an emphatic protest to the War Department against the project of constructing a canal for utilizing the surplus water in the St. Mary's river for hydraulic power. It is the decided opinion of the association that this power canal would permanently lower the level of Lake Superior, that it would destroy the efficiency of millions of dollars worth of harbor improvements, and that it would diminish the carrying capacity of every boat engaged in the Lake Superior trade, thus making an increase in freight charges necessary—a direct blow at every consumer in the Northwest. Col. Lydecker, in charge of the government works at the "Soo," and Engineer Campbell of the Deep Waterways' Commission, concur in opinion that this canal will permanently lower the lake levels, and such eminent authority is entitled to consideration. The matter was brought to the attention of the War Department a year ago, but as yet no action has been taken to stop it. In the meantime work on the canal goes steadily forward.—Inland Ocean, West Superior, Wis.

NOTES.

THE highest steam pressure in the boilers of the early steamers was 10 pounds per square inch, and up to the year 1870, did not exceed much over 30 pounds. Then it was increased to 60 pounds and at the present time steam is used at 180 pounds, and in some cases up to 250 pounds per square inch.

PROF. A.G. MCADIE, of the Weather Bureau, Department of Agriculture, now in charge of the California climate and crop service and stationed at San Francisco, says that before long science will succeed in measuring the energy of a lightning flash, and also in demonstrating the nature of the aurora. The artificial production of an electric fire-ball by Prof. Richmann is unique, though electricity in this form is not unfamiliar. Sometimes such balls are seen to run along the surface of the sea, and when they appear on land they usually burst with a loud noise, often with disastrous effects. Nobody yet has been able to explain these balls, which appear to be a very concentrated form of electricity.

MILD steel has about fifty per cent. greater tensile strength than iron, considerably more ductile qualities, and with proper treatment, much superior working qualities. These are important advantages in favor of steel for ship-building; and further, the increase in the tensile strength over that of iron admits of a considerable reduction in the thickness of the material without diminishing the strength of the vessel. The saving in the weight of the hull obviously admits of increased carrying capacity on the same displacement. Again, the introduction of the compound, and more recently of the triple and quadruple expansion engines, together with other important improvements in the steam propelling machinery and decreased consumption of coal, have made it practicable to attain high speeds at costs which afford striking comparisons with the experience of even less than two or three decades ago.

SEATTLE, Washington, papers state that a large raft was to start for San Francisco on Aug. 26, in tow of the steamer Czarina. This raft has been building in Seattle since last February when the cradle for the raft structure was launched. The raft is 625 ft. long, 55 ft. beam, 38 ft. deep, and draws 24 ft. of water. It contains 11,000 sticks averaging 60 ft. in length. It is said that this quantity of timber is about 11 times the timber cargo of a fair-sized sailing ship. The raft is shaped like a whaleback built craft, being pointed at both ends, and bound with 2-in. chains placed 6 ft. apart from end to end. The cost of constructing the raft, including the cradle, was something more than \$5,000. It was intended that after the raft was launched from its cradle the latter should be towed into fresh water, in the Snohomish river, to remain one month for the purpose of killing toredos, before constructing another raft. This raft was constructed by the Robertson Raft Co., which a short time ago launched a similar raft 600 ft. long at Stella, on the Columbia river, to be towed to the same destination.

THE August number of the American Society of Naval Engineers appeared early the present week and like its predecessors reflects much credit upon the adaptability, skill and energy of the officers concerned in its production. The leading paper is a report on the "Test of the Machinery of the Minnesota Company's Steamer Pennsylvania," by Lieuts. Bryan and White, of the Navy. This report is not only interesting, but valuable in giving accurate data on the subject of lake navigation, about which, however, much has hitherto been made matter of record. The second paper is a new presentation of the somewhat abstruse subject "The Energy of the Bow Wave," by Marston Niles, formerly of the Navy. Mr. Yarrow, the well known boiler maker of England is credited with an interesting paper on the durability of the water-tube boiler. This paper was originally read before the July meeting of Naval Architects. The masterly argument of Rear Admiral Melville on "The Logical Arrangement of the Motive Power of Warships" follows, and the next article is one by Lieut. Comdr. Willets, the editor of the Journal, on "The Lens and Pencil in Mechanical Engineering." An illustrated article on large Atlantic cargo steamers is followed by copious "Notes" on miscellaneous subjects. This number has 264 pages of reading matter and taken as a whole the present issue will stand a favorable comparison with any of its predecessors. The August number forms No. 3 of Vol. XI.

HE Knew.—Two canny Scots walking to Auchtermuchty saw an uncouth figure standing in a distant field. After gazing intently, one said: "It's never moving, so its tatta (potato) bogie" (scarecrow). "It's no tatta bogie," replied the other. "It's a man working by the day."



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CLEVELAND, O., SEPTEMBER 7, 1899.

DIVERTING the course of a natural waterway, flowing water, etc., is illegal. There is no virtue in "robbing Peter to pay Paul."

CANADIAN papers have a great deal to say on the Alaskan boundary question but not a word about deflecting the natural course of waterways on the Great Lakes. It seems a question of "whose hog is under the fence."

STATES, municipalities, syndicates or any private citizen may plan, excavate or construct canals, aqueducts or other artificially formed water courses. The United States Secretary of War has also a voice in the conservancy of navigable waterways.

It is ridiculous to expect that one or two men, no matter how talented, can determine the natural economy ruling the level of the Great Lakes, so as to submit an intelligible, detailed report of the entire question when the next Congress convenes

LAST August the ocean freight rate on grain to Liverpool was 2 cents per bushel. London, Glasgow, Bristol respectively 2½ cents, 2¾ cents and 3¼ cents. August of this year, the freight from Duluth to Buffalo was 5 cents. September, opening at 6 cents.

LONDON, New York, Antwerp, Cardiff and Liverpool are the largest shipping ports in the foreign trade in the world and in the order named. It would appear as if the latter port was losing its trade, also its prestige as being the New York of the United Kingdom.

WE just make the passing remark that W. N. W. ½ W., according to "Notice to Mariners" parlance, is W. by N. ½ N. in the common, every day, seaman-like way of expressing a course or distance. No! we don't say that 110 cents is not \$1.10 cents, only that the latter is the more usual way of putting it.

WATER front interests, such as coal docks, grain elevators, etc., at the head of Lake Superior seem to have had a cause of complaint during the past week or two on account of the high stage of water partly submerging their dock property. At the eastern lake extremity the opposite has ruled and especially so at the lower end of Lake Ontario.

THE legend on Lloyd's medals for saving life at sea, printed in this issue of the RECORD, may furnish an intimation for the inscription to be placed on the medals, soon we hope to see awarded by the "Shipwreck and Humane Society of the Lakes." Vessel owners are members of their respective local Chambers of Commerce, this would be the right place for a presentation committee to come to order.

LOCAL MAGNETIC INFLUENCES.

In view of the fact that the heel of the season of lake navigation is again approaching, the RECORD reiterates its demand for a government survey on the north shore of Lake Superior to determine the precise situations, and the amount of local magnetic disturbances which are found to exist with such force as to lead vessels ashore in that region.

Within one week and only a little later in the season, three fine steamers were practically sacrificed last year by being stranded on the north shore of Lake Superior, and, at this writing, the most valuable craft of the trio is still there, notwithstanding, wrecking operations have been carried on since the opening of navigation.

It is well known that magnetic minerals in the ground under the ship, have been powerfully felt in shoal water, and that compasses have been deflected when vessels were passing over these spots, how much more so, when there are many magnetic centers near together (such as we opine may be found on the shores of Lake Superior,) we desire a surveying party to find out in the interest of science, navigation and general commerce.

The law which has hitherto been found to hold good as regards local magnetic disturbance is, that north of the magnetic equator the north end of the compass needle is attracted towards any center of disturbance; south of the magnetic equator it is repelled, and it is very desirable, that on Lake Superior, as well as elsewhere, the areas of local magnetic attraction should have their positions fixed and the facts made known as far as they can be.

The difficulty which the RECORD has hitherto experienced in advocating a survey of the north shore of Lake Superior for this purpose, is in our inexactitude of information relative to the branch, or department of the government under whose jurisdiction such an expedition properly belongs. Prior to the advent of the hydrographic service, U. S. N., on the lakes, the Chief of Engineers, U. S. Army, would no doubt, have taken up the question immediately on the presentation of the foregoing facts, but the necessity was not so pressing a few years ago as it is now. Lake Superior is making history very fast, the Corps of Engineers is one of the hardest worked, most scientific, and valuable branches of the principal arm of the Federal government, the officers in charge of the various lake districts, as at other points, and elsewhere, are already overborne with their manifold duties in connection with important government works, plans for future improvements, etc. It is possible, therefore, and for the reasons above stated, that the Chief of Engineers would prefer the U. S. S. Michigan being detailed for this special survey. In any case, there seems to be some inertia to be overcome somewhere, and the earlier that it is determined what branch of the service is to enter upon a series of observations to discover the area of local magnetic disturbances and locate these positions, isolated, continuous, numerous or otherwise, the better it will be for all interests directly concerned, and equally so in a comparative degree, if the interests are only remotely concerned in the commerce of the Great Lakes.

THE "SOO" RIVER BLOCKADE.

The most serious although temporary setback to Lake Superior commerce and transportation took place on Tuesday last through the sinking at Sailors' Encampment, "Soo" river, of the steamer Douglass Houghton and her consort, jointly loaded with 13,500 tons of ore.

It is now estimated that it will take fully a week to clear the channel, or at least this is the mean of several expert opinions, and no expense is being spared in accomplishing this result, in the meantime, the eastern or light draft channel is being used, this will mitigate the general loss and inconvenience to a great extent, but as this channel is more tortuous and unsafe than the main one, the utmost care will be found necessary not to block it also, through any unforeseen chances of casualty.

The executive committee of the Lake Carriers' Association acted with commendable zeal in at once calling a meeting and taking the best advised action possible, foreseeing that confusion was liable to ensue at the earliest raising of the blockade. The following resolution was unanimously adopted at the meeting of the Executive and Finance Committee held in the offices of the chairman, Capt. James Corrigan, Cleveland, on Tuesday.

"Capt. A. B. Davies of the steamer Morrill, of the U. S. revenue cutter service is hereby authorized to assume control of all boats in the "Soo" river when the steamer Houghton is removed from the channel, and to regulate the movements of the up and down bound boats so as to prevent crowding

and racing. Capt. Davies is also requested to permit all vessels that can pass through the old channel with safety to do so."

Equal energy and well advised action was taken at Chicago and all owners will work in unison, irrespective of expenses, to clear the channel and permit the resumption of navigation, transportation and commerce.

The first news of the disaster, which was caused by the steamer's wheel chains parting, made the accident appear more serious than it actually is, although it is computed that the total monetary loss will amount to about \$1,000,000. Yet a still worse situation would have been placed before the lake marine if traffic had been stopped at any one of the several possible points between Amherstburg and Port Huron. Capt. Thos. Wilson, 1st vice-president of the Lake Carriers' Association has continually advocated the system of duplicate channels wherever possible, throughout the narrow fairways forming the connecting links on the chain of lakes, especially at points in the "Soo" river, and it is now probable that a more direct attention will be given to this admirable suggestion.

It may be noted in connection with this far reaching and disastrous casualty that the steamer Douglass Houghton is owned by the Bessemer Steamship Co., (Rockefeller Line) Cleveland, one of the largest, best found and equipped fleets on the chain of lakes, managed and superintended by men of the highest business talent and technical as well as industrial skill. The masters and officers are also said to be the cream of the lake talent, keyed up to the highest point of duty, always active and alert to their owners' interests, and all there, when wanted to exercise superior and extraordinary skill and ability in the handling of the property placed in their charge. Such in all candor are the attributes credited to the personnel of this immense modern fleet of lake cargo steamers.

The satisfaction to be derived from a consideration of the foregoing is, that if all interests concerned are called upon to expend about \$1,000,000, or any portion thereof, through this casualty, the deplorably large financial outlay has not been caused through any miserly, impecunious spirit or principle indulged in by the owners, manager, or crew of the Houghton. A chain is no stronger than its weakest link, and a wire rope suffers a diminution of strength from a chafed strand. The Houghton's steering gear gave out through some unforeseen and unknown defect beyond the power of human intelligence to anticipate, hence, the casualty.

IN AN article on "Compass Curiosities" the Journal of Commerce, Liverpool, notes among other peculiarities of local magnetic attraction on compass needles, the following:

"In 1892, the El Sol, an iron steamer with iron masts, was struck by lightning. The magnetism of her compass was practically reversed. A similar accident happened to the Capella with like results. When steel crinolines of capacious extent were in vogue, one worn by a lady passenger who used to sit near the compass fairly turned its head. Two lady passengers in the pilot house of the steamer Castalia, on the Great Lakes of North America, also acted adversely on the compass needle. Just previously they had visited the electric light plant, and the steel in their corsets had become magnetized. Another vessel went ashore on Lake Superior consequent on the steel fittings of the pilot's cork leg acting on the compass needle. Really some of the compass stories occasionally verge on the marvellous, nevertheless letters from shipmasters, such as that of Capt. Norman, arouse the attention of shipmasters in general. They cannot, however, be too precise as to detail, otherwise a satisfactory explanation is impossible."

The Journal of Commerce does well to point out the fact that a precision of detail is necessary in all these cases. As stated elsewhere in this issue of the RECORD, we lean to the belief that the magnetic attraction may be located under a ship's bottom when she is coasting along the north shore of Lake Superior, at least all shipmasters and pilots so aver. There are but few masters who have the leisure time to make competent observations in this locality, and those who have the leisure are not competent, so that compass curiosities on the north shore of Lake Superior, are, as yet, an unknown quantity.

TALK, about a deep waterway from the lakes to the coast to accommodate trans-Atlantic tonnage, is all clap trap. The White Star line steamer Cymric, New York to Liverpool, with general cargo, docked at the latter port on August 25th, having a draft of 29 feet 9 inches. This was a heavy, p'raps the heaviest draft ever docked in Liverpool. What such a draft would mean from Duluth to Montreal, is better "imagined than described."

THE saying that everything is comparative will generally be admitted as a truism. Such being the case, we may look for an increased business and prestige in yacht building on the lakes, the American yacht having cleanly and cleverly won the Canada's cup last week, in three straight conquests in as many trials of speed. The next feature in this special class of tonnage will be demonstrated next month when the coast sailing yachts Columbia and Shamrock compete for the international honors carried with the winner of the America's cup. With the Columbia as a winner, and representing the highest skill of American yacht builders, we may solicit orders from, and cater to, the world's industry in the construction of smart, fancy tonnage, guaranteeing to purchasers the best handling and sailing qualities that can be encompassed in the form of a hull, though this feature we might with all honesty have laid claim to, ere this. In the highest branch of marine architecture, viz.: the building of war vessels, we have already demonstrated our fitness to compete with the British, as witness the number of contracts from foreign governments, awarded to our eastern shipbuilders and now in course of construction and completion, as well as our own, by no means insignificant additions to the U. S. N. Everything is comparative and winners are usually conquerors. So mote it be.

IT WON'T do for people concerned in the best interests and welfare of lake commerce and the perpetuation of same to stand idly by depending on others to fight their battle in the campaign for a proper maintenance of lake levels. This question can neither be shelved nor shirked. Trenchant, determined and unanimous action must be taken to guide, guard and preserve all vested interests, local, commercial, as well as national, in these vast natural sheets of water. A popular expression of common sense views generally accomplishes more than it is credited with, moreover, it is undubitable, that an excess of demand lessens supply. This refers markedly to lake levels.

THE trade relations between the Dominion of Canada and the United States, and especially between the cities lying along the Great Lakes, are of so intimate a character that what benefits the commerce of one government benefits the commerce of the other. Our interests are becoming more closely identified and the policy, we believe, is growing in favor that our relations to be of the largest mutual benefit, must be reciprocal relations. Upon these broad and sound principles and enlightened commercial policy the attention of the United States and the Dominion of Canada should be immediately centered on the formation of a joint commission to regulate and maintain the best natural level of the Great Lakes.

IT would be an excellent, well advised and withal a very necessary departure if the local inspectors of hulls and equipment, U. S. Steamboat Inspection Service, would call for small boat drill on passenger and excursion steamers once or twice during the summer season. Fire drill is perhaps of not so much practical importance, although an absolute preventative of alarm and confusion among passengers on the report of fire, however trivial the consequences. Exercises at boat drill should be carried on with a periodic regularity on all passenger-carrying steamers, and a lack of help, skill or facilities in getting small boats away in good order from a ship's side be duly and officially noted.

FINES for not having a clean bill of health when clearing from a Canadian to a United States port, have been deservedly plentiful this season. Masters of lake boats, so fined, regularly pleaded the baby act of ignorance, and were let down by the Treasury Department on paying a minimized penalty of \$5 or \$10. The Secretary of the Treasury gave due notice of the rules to be enforced, so that those who ran might read. Masters who were too indolent, ignorant or careless to keep posted on current regulations, and this one in particular, deserved to lose a little of their pelf. In many cases, owners were annoyed at their vessels undergoing a slight detention on this account.

THE subject of "Tapping the Lakes" is now talked of from Duluth to Montreal. The latest project in tapping is to construct an aqueduct from Lake Erie to New York City, and incidentally, to grant all towns en route an inexhaustible supply of "acqua pura," Adam's ale, with ice on the side.

ABOUT a dozen cases each week is the record of people injured through falling into vessels' hatchways. A guard of some sort ought to be placed at least on one side of the openings to the hold. The premium paid for an accident insurance policy does not relieve the owner of his moral or humane responsibility to his fellow-man or employe, the assurer only bears the financial risk for the assured. This feature simply requires to be brought to the attention of lake vessel owners, who, no doubt, will apply some simple device as a preventative to such accidents in the future.

IT is the duty of a shipmaster to save and preserve the property committed to his charge without the slightest regard to insurance or ownership. It is no concern of his whether the property be insured or not, or who owns or has liens upon it. His business is to act as if he were himself the uninsured owner of ship, cargo and freight. Whatever he may prudently do, acting in this character will be sure to be done from proper motives and he will stand above criticism on the part of owners, shippers or insurers, though, naturally he may still be liable to errors in judgment.

THE entire wrecking outfit of the lakes, dredgers, lighters and adequate steam assistance should be put in charge of the most talented wreckers and the "Soo" river blockade raised promptly and effectively. No half measures with chances of slips and delays should be countenanced. Some of the Coulby-Davidson principles of blockade raising is applicable in this case.

SHOULD not the Coast and Geodetic Survey, Treasury Department, undertake to survey the north shore of Lake Superior to determine the existence and location of magnetic attraction?

THE "Soo" river is Hobsonized like the bar recently at Santiago, Cuba, and yet irresponsibles will talk of the possibility of international interlake hostilities.

LAKE FREIGHTS.

The Lake Superior grain rate has distanced the figures on iron ore, the latest charters being made at 6 cents, a lump advance of $\frac{3}{4}$ cent since Tuesday, early October loading $6\frac{1}{4}$ cents on wheat, Chicago rates having advanced from 3 cents to $3\frac{1}{2}$ cents dropped back to the former rate on account of the blockade to Lake Superior through the sinking of the steamer Douglas Houghton, on Tuesday, at Sailors' Encampment, "Soo" river.

Iron ore charters are at \$2 from the head of Lake Superior, according to the grain rate this figure should now be \$2.24, but traffic is paralyzed and will be for a week owing to the above mentioned cause. The latest Marquette charters are quoted at \$1.50 and \$1.25 Escanaba to Ohio ports with vessels holding for a 5 cent advance.

The coal rate on anthracite, Buffalo to Lake Michigan advanced 10 cents, making it the even \$1 with the usual increased rate to minor ports. Ohio shipments are slow at 90 cents to Lake Michigan, no advance quoted on other routes, nor is there likely to be since large cargoes are practically blocked out of Lake Superior.

Lumber rates from Lake Superior advanced to \$4 per M feet to Ohio ports.

The freight situation which has steadily improved each week during the past month or two has met with a very serious set back on account of the sinking of one steamer in a narrow channel commanding the Lake Superior trade, there are other points in the connecting waters of the lakes whereby a similar casualty might render still greater damage to lake commerce and this feature forms a strong argument in favor of having channels duplicated, or an up or down bound route established.

THE plant of the Charles Hillman & Sons' Ship and Engine Co., Philadelphia, which has been idle since December, 1898, when the company made an assignment, has been sold to a syndicate of Philadelphia and New York capitalists. The names of the purchasers and the price paid for the works are withheld until the details of the transfer of the plant shall have been completed. It is said that the new firm has assurances of receiving several large contracts, and it is expected that the shipyard will be working full time in the near future. It is understood that Harry Konitzky, the general manager of the Columbian Iron Works and Dry Dock Co., of Baltimore, will be the general manager of the new firm.

DATA CONCERNING THE PHYSICS AND HYDRAULICS OF THE LAKES TOO MEAGER—INTERNATIONAL INVESTIGATION RECOMMENDED.

DULUTH, MINN., Sept. 5, 1899.

THE MARINE RECORD:

Replying to your letter of Sept. 1st, 1899 with inclosures, I would say that a wise man will not prophesy, unless he knows. The data concerning the lake levels are as yet entirely too meager to afford grounds for an intelligent judgment. Of one thing, however, I think there can be no doubt, and that is, that no canals in either country should be allowed to be opened, that is to say, canals or channels without locks, or canals with locks which draw off daily large quantities of water, should be permitted, without previous investigation and recommendation by an international board of engineers. Furthermore, that immediate steps should be taken to determine every possible datum concerning the physics and hydraulics of the Great Lakes.

Very respectfully,

CLINTON B. SEARS,
Major, Corps of Engineers, U. S. A.

LLOYD'S MEDAL FOR SAVING LIVES AT SEA.

The medal of London Lloyd's Society is presented by the corporation as an honorary acknowledgement to those who have by extraordinary exertions contributed to the saving of life at sea.

The subject of the medal is taken from the Odyssey, where Ulysses, after various adventures during his return to his native Ithaca, subsequent to the fall of Troy, is described as being rescued from the perils of a storm by Leucothoe.

"A mortal once

But now, an azure sister of the main."

The words addressed by Leucothoe to the shipwrecked hero represents the action of the obverse side.

"This heavenly scarf beneath thy bosom bind,
And live, give all thy terrors to the wind."

The reverse is taken from a medal of Augustus, a crown of oak being the reward given by the Romans to him who saved the life of a citizen, and within is inscribed the motto derived from the the same authority.

"Ob cives servatos."

In 1893 the committee of Lloyd's decided to bestow a medal upon ships' officers and others, who, by meritorious services in the preservation of vessels and cargoes from perils of all kinds, have prevented claims against underwriters. A bronze medal was accordingly designed for this purpose about fifty of which have been presented up to the present time. All the medals are of silver or bronze.

LETTERS AT DETROIT MARINE POST OFFICE

SEPTEMBER 6, 1899.

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Monroe, William
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McGraw, W.
Porter, Chas.
Porter, Walter
Purcell, William
Ragland, Henry
Rowe, Robt.
Robinson, Edward
Rowe, Wm. C.
Spidal, Chas.
Tyron, Farrar
Taylor, R. G.
Zealand, Tom

MARINE PATENTS.

Patents on marine inventions issued Sept. 5, 1899. Reported specially for The Marine Record. Complete copies of patents furnished at the rate of ten cents each.

632,238. Mooring device. B. J. Christensen, New York, N. Y.

632,276. Water vehicle. Diedrich Oltmann, New York, N. Y.

632,662. Means for propelling liquids applicable for use in propulsion of vessels. Edwin Tatham, London, England.

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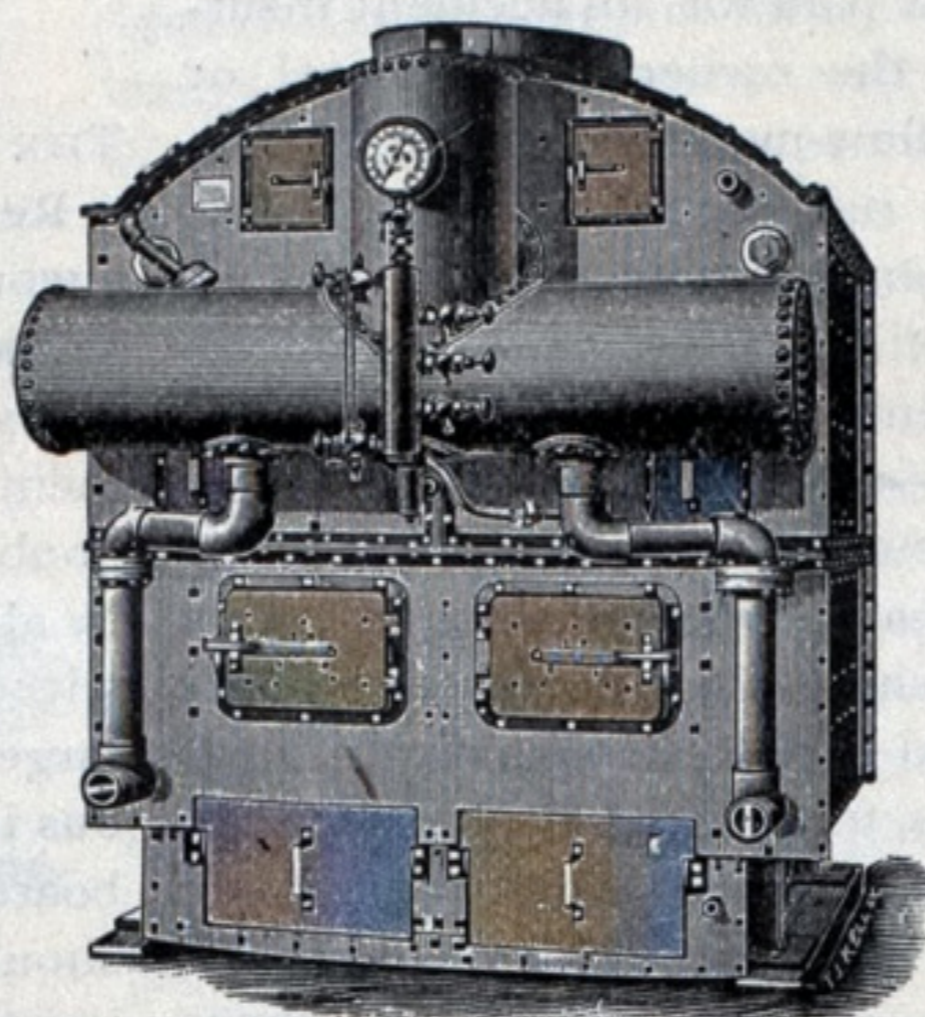
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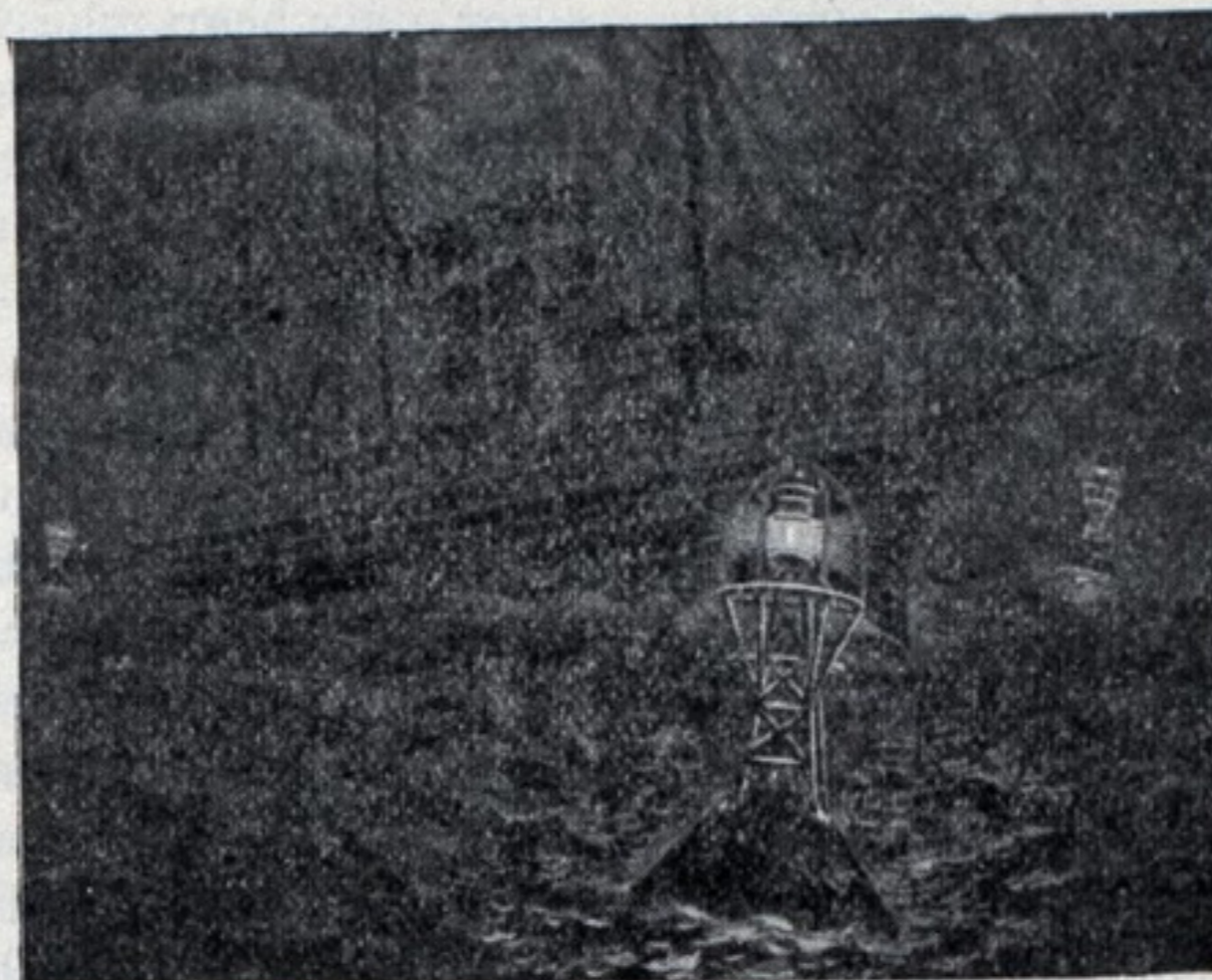
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HERE'S MORE OF IT.

The Buffalo Evening News, September 5th, prints the following communication under the caption of "A Very Good Suggestion:"

"I note that New York City has been talking considerable about the Ramapo job and the necessity for securing an ample supply of water. Lake Champlain and also Lake George and, I believe, Lake Ontario, have been mentioned as suitable sources of supply, but Lake Erie seems to be the most desirable of all, as the supply would be simply inexhaustible. The fall between this city and New York is sufficient to carry the water down to the very door of our fast-growing metropolis, and with a little filtering, say in the spring months, the people would have all the water they might care to use, and as pure as that of any city, except, possibly that of Vienna, said to be the best in the world. Another thing might be done (and I ask Comptroller Coler, of New York, to consider it and let us hear from him) the State, in providing a new and better canal, might make provisions for this supply pipe, and let the cities of Rochester, Syracuse and Albany participate or get the water from the same source. New York could then boast of being the greatest State in the union in every sense of the word. It would not injure Buffalo; it could never reduce the lake level, the millions of people would be overjoyed for all time to come. Of course, my suggestion will probably meet with opposition in aqueduct quarters, but they might recoup from other "jobs" and would suffer no loss in the long run. Philadelphia, cursed as it is with typhoid fever, owing to the villainous stuff the city mains contain, would hail with joy such an opportunity of securing a supply of water, such as I outline in this letter. The distance is not so great. Vienna, I am informed, brings its waters a great distance—and look at its low mortality rate!" * * *

After a perusal of the foregoing, we can simply permit our readers to judge of the aptness of the RECORD's campaign at this time in our endeavors to have lake levels regulated. The Omnipotent would need to be consulted regarding the inexhaustible source of supply. Every State bordering on the Great Lakes is eminently interested in this question of "Tapping the Lakes."

WAKEN UP ALL ROUND.

Regarding lake levels the Montreal Witness says:

"There is always reason for serious consideration before lakes are interfered with, as in nothing have there been more notable changes on the earth's surface within the history of man than in the lowering of lake surfaces. All that is necessary is to cut the outlet a little deeper and out flows the lake. Any lowering of the Niagara ledge would involve a lowering of Lake Erie, which that lake can ill afford. An interesting and to us important, if not a very large, illustration of this process is found in the disappearance of the old lake that was used by the first voyagers between Montreal and Lachine by which means they were able to surmount the Lachine rapids with but a trifling portage. By a slight deepening of the St. Pierre river this lake has become what we call the swamp, a poor place for anything except for growing celery for the New York market. Any lowering of the lake levels might well prove an international question of importance. Fortunately, however, each country has sufficient at risk in the matter to enable the other to sleep soundly. Canada could easily afford to leave the maintenance of the water level when threatened by Chicago, to the good people of Cleveland and Buffalo and Oswego and Ogdensburg. In like manner the United States can safely leave the maintenance of the lake levels as far as we are concerned to our own lake front interests. Sarnia and Goderich and Collingwood and Owen Sound are not going to allow Lake Huron to be let out, even if there were the remotest chance of an almost still water canal having any such gigantic effect. The real trouble with the parties complaining is that they fear the proposed canal will benefit Canada at their expense. For that they have reason. There are few

waters in the world so thronged with commerce as the Detroit river, through which more tonnage passes than through the Suez canal. If any serious amount of this tonnage were deflected the effect would no doubt be serious, but it would not constitute a ground of quarrel."

SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the Sun's setting. The bearing may be taken when the Sun's center is on the horizon, rising or setting. The three elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Sunrise.	Amplitudes.	Bearing P'ts.	Bearing Comp.
Sept. 9.....	E. 7° N. = N. 73° E. = E. 5° N.		
Sept. 12.....	E. 5° N. = N. 7½° E. = E. ½° N.		
Sept. 15.....	E. 4° N. = N. 7¾° E. = E. ¾° N.		

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.

Sunrise.	Amplitudes.	Bearing P'ts.	Bearing Comp.
Sept. 9.....	E. 7° N. = N. 73° E. = E. 5° N.		
Sept. 12.....	E. 5° N. = N. 7½° E. = E. ½° N.		
Sept. 15.....	E. 4° N. = N. 7¾° E. = E. ¾° N.		

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Sunrise.	Amplitudes.	Bearing P'ts.	Bearing Comp.
Sept. 9.....	E. 7° N. = N. 73° E. = E. 5° N.		
Sept. 12.....	E. 6° N. = N. 7½° E. = E. ½° N.		
Sept. 15.....	E. 4° N. = N. 7¾° E. = E. ¾° N.		

LAKE SUPERIOR, LAT. 48° N.

Sunrise.	Amplitudes.	Bearing P'ts.	Bearing Comp.
Sept. 9.....	E. 7° N. = N. 63° E. = E. 5° N.		
Sept. 12.....	E. 6° N. = N. 7½° E. = E. ½° N.		
Sept. 15.....	E. 5° N. = N. 7¾° E. = E. ¾° N.		

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

STUDYING LAKE LEVELS.

The MARINE RECORD is giving much attention to the water level of the lakes and to the possible effect of the Chicago drainage canal and of others proposed upon it. While it is yet early to determine the full effect, there is no question of ultimate danger and risk. The RECORD is getting the opinions of experts. This topic is one of interest to all lake ports and the bearings of the question will be followed with interest.—The Times, Lorain, O.

In a letter to the "Journal of Commerce," New York, David L. Bradley says: "The recent decisions rendered by the Advocate General of the Navy to the effect that a naval vessel is not required to employ a pilot in entering or leaving a harbor of the United States, and that it remains discretionary with the captain to accept the services of a State pilot, is certainly a just one, and the same ruling should apply to the masters of the American vessels, provided they are competent navigators and familiar with the different harbors and there are many of such. To compel a vessel's captain to accept the services of a pilot when the former is fully capable of guiding his ship is a downright imposition, and should be abolished."

MILITARY OFFICERS AS SAILORS.

THE ARMY AND NAVY JOURNAL.

The Quartermaster's Department of the Army are meeting with the difficulty in the matter of commanding transports at sea which we anticipated in the beginning, and against which we warned them. The English Government, with its large experience, has solved the difficulty in the only practicable way, by turning the whole matter of transportation by sea over to the Navy. Men exercise authority, not because they wear a uniform and have a title, but they receive the title and uniform because they are supposed to represent knowledge and experience superior to that of those they command. If this is not so authority is brought into contempt. It is not the case where a man without nautical experience is put in control of a ship at sea. An old salt, brought up for examination for the position of coast pilot, was immensely disgusted because the first question asked him was: "Who was Uncas?" Sailors have a natural contempt for men who undertake to direct them in matters requiring such special knowledge as the navigation of the ever changing sea. Disaster will some day result from our present system, and friction in the meantime certain to occur. What is to happen if there comes a direct conflict of authority between the soldier and sailor in an emergency? Will the Quartermaster take command of the ship and put the captain in irons, or will this order be reversed? We are getting many new men in the service, and discretion comes with experience and not by birth or military appointment.

We learn that the Quartermaster's Department is much concerned over the outgrowth of the trial of Capt. W. C. Brickley, of the transport McClellan. Capt. Brickley was adjudged guilty of insubordination, and dismissed from the service. This was the signal for a number of attacks upon the Army Transport Service which have appeared recently in marine publications. Capt. Brickley determined upon his course of action, and refused to obey the order of the Quartermaster to remain in the harbor where he did not consider himself safe. He was placed under arrest, tried by court martial and dismissed, and his friends in the marine service are inclined to believe him a wronged man, and the whole nautical sentiment is with him. Col. Bird, of the Transport Service left Washington Thursday night for New York, where he will consult with Maj. Jones, Superintendent of the Transport Service, with a view to placing before several of the editors of the marine papers a digest of the testimony in the case of Capt. Brickley. Col. Bird is authority for the statement that there was more in the case than appears on the surface, but he refuses to allow any part of the digest to be published at this time. It is said the testimony makes out an entirely different case from what the captain pictures it, but as far as can be learned the most damaging statements attributed to Capt. Brickley are that he "cussed" the Quartermaster. This was highly improper, but if there is anything that provokes a sailor beyond reason it is the attempt of a landsman to teach him his business.

Another old laker to come to salt water is the steamer Frank Woods, a 500-tonner, ten years of age. But as she is to go to Galveston, she will not cut any figure hereabouts. Like the sieve-like lake barge Camden, just towed in here with steamers trying to keep her afloat, her owners will not make over 100 per cent. the first year with her, evidently. The Camden is an "old hooker," having been built in Cleveland in 1872. I understand that the lake people are beginning to realize that the fury of the Atlantic is fully up to that of the lakes, and that there is not much use in putting an Also Ran out here in open water and expecting to make money with her as easily as rolling off a log.—The Day, New London, Conn.

Couldn't Hold Himself Up.—Mrs. Jaggs (time 2 a. m.) What in the world kept you so late? Mr. Jaggs—W-why (hic), m' dear, just as I was comin' (hic) 'long frstht shing know'd was held up by shix or sheven highwaym's on (hic) darkish street. Mrs. Jaggs—Well, it's a good thing they happened to be there to hold you up. You never could have done it yourself—Chicago News.

THE ST. CLAIR-LAKE ERIE CANAL.

The Lake St. Clair and Lake Erie ship canal, which is to be reported upon by an engineer of the United States War Department at the request of the Lake Carriers' Association, was chartered by the Parliament of Canada two years ago, its chief promoter being Lieut.-Col. Tisdale, M. P., for several years chairman of the House Committee on Railways, Canals and Telegraph lines. It is calculated to save 79 miles as compared with the present Detroit river route to Lake Erie. The territory through which the canal would pass is wholly in Canada, so that it could not be undertaken by the United States Government, while the Government of Canada with the St. Lawrence canal improvements on its hands, could not well take the project in hand, hence a private company was chartered to carry out the work. It is claimed by the promoters that the canal will be easy of construction, the neck of the peninsula between the lakes being only 13 miles across. For the first two miles from Lake St. Clair the land is low and marshy, rising thence with a regular slope to the shore of Lake Erie, whose banks are 50 feet above the water. The proposed depth of the canal is 21 feet. It is pointed out that the Hay Lake channel made by the United States Government at a cost of nearly two and a quarter millions is calculated to have been well worth the money, although it saves but 11 miles as compared with the old St. Mary's river channel. From this it is argued that at least two-thirds of the lake shipping would use the canal owing to the saving of 79 miles, so that tolls to the amount of \$550,000 yearly are estimated, having a net saving of \$1,014,200 a year to shipping, or about 20 per cent. of the estimated cost of the canal. It is said to be the probable effect of such a cutting upon the water level in the lakes that United States shipping interests are chiefly concerned about, and an international commission to look into the phase of the project is already proposed. But the divergence of opinion elicited upon that point in connection with the Chicago drainage canal does not bode serious consequences for the St. Clair and Erie if the promoters can only raise the necessary capital for its construction. From the St. Clair Flats to an offing in Lake Erie opposite the mouth of the canal is 111 miles. From the St. Clair Flats through the canal would be 32 miles; 19 in Lake St. Clair, and 13 in the canal itself.

FOG SIGNALS.

Sound is conveyed in a very capricious way through the atmosphere. At least this is the best way to describe it, until we know more about the laws governing the audibility of sound under varying or different changes of atmospheric conditions. Apart from wind, large areas of silence have been found in different directions and at different distances

from the origin of a sound, even in clear weather. Therefore, too much confidence should not be placed in the hearing or not hearing of a fog signal. The apparatus, moreover, for sounding the signal often requires some time before it is in readiness to act. A fog often creeps imperceptibly toward the land, and it is not observed by the people in charge of the fog-signal station until it is upon them; whereas, a ship may have been for many hours in it, and approaching the land. In such a case no signal may be sounded, it may not be heard owing to the afore mentioned aberrations in audibility of sound.

CANADIAN PRIORITY.

An interesting but little known bit of history in connection with early steam navigation on the ocean was brought to public attention in the recent address of the venerable Kivas Tully on his election to the presidency of the recently organized Engineers' Club of Toronto, says the Engineering News.

This was to the effect that to the province of Quebec belongs the credit of having built the first steamship that crossed the Atlantic from either side. The steamship was called the Royal William, commanded by Capt. McDougall, and sailed from Quebec on August 5, 1833, arriving at Gravesend on September 11, having steamed the whole distance.

This seems at first sight to contradict the well-known claims to priority made for Savannah as the first steamship to cross the Atlantic. The Savannah, however, on her memorable voyage from Savannah to Liverpool (May 20, 1819) used her engines during 18 days and progressed under sail the remainder of the time, the paddle-wheels being hoisted on board when not in use.

The Royal William, therefore, appears to have been the first vessel to make the voyage using steam for the whole distance.

NEW TOW BOATS.

The firm of Burger and Burger, Manitowoc, Wis., recently received a contract from Chicago to build two tugs and their construction is now well under way. They are being built for D. Bradwell Co., of Chicago, and are 85 feet over all and 17½ feet beam, with a depth of 7½ feet. The keels of both are laid and the framework of one is nearly up. The tugs will not be completed until spring, at which time they will be delivered to their owners.

A Celestial Reproach.—Dorothy—"Mamma, if I should die, would I go to heaven?" "Why, yes, darling; of course you would." "And if you should die, would you go to heaven, too?" "I hope so dear." "I hope so, too; because it would be very awkward for me to be known as the little girl whose mother is in hell."—Life.

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT.
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 10TH DISTRICT.
BUFFALO, N. Y., Sept. 5th, 1899.

Notice is hereby given that South Bank (outer) Black spar-buoy No. 3, Channel into Presqu'ile Bay, Lake Erie, Pennsylvania, has disappeared; it will be replaced as soon as practicable.

By authority of the Light-House Board.

FRANKLIN HANFORD, Commander, U. S. N.
Inspector 10th L. H. District.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—WISCONSIN.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., Aug. 30, 1899.

RACINE REEF BEACON.—Notice is hereby given that, on or about August 31, 1899, a lens lantern, showing a fixed white light, will be established on the structure recently erected on Racine Reef, near the entrance to Racine Harbor, westerly side of Lake Michigan.

The light will illuminate the entire horizon, and its focal plane will be 37 feet above mean lake level.

The structure is a square, yellow brick pier, supporting a square, gray pyramidal skeleton metal tower, surmounted by a small deck and lantern post bearing the lens lantern. Three gray, cylindrical, gas tanks are located about 9 feet above the top of the pier.

Bearings (true) and distances of prominent objects from the beacon are:

Kenosha (Southport) Light-House, S. 21° 35' W. (S. by W. ¾ W.), 9¾ statute miles; Racine (Root River) Light-house, N. 73° 29' W. (W.N.W. ½ W.), 1¾ statute miles; Wind Point (Racine Point) Light-House, N. 12° 09' W. (N. by W. ½ W.), 3¾ statute miles.

By order of the Light-House Board:

FRANCIS J. HIGGINSON,
Rear-Admiral, U. S. Navy, Chairman.

The project of deepening the Dismal Swamp canal has been revived since the many marine disasters off Cape Hatteras. At present the canal accommodates vessels of a draft of ten feet, and considerable freight which formerly went around the cape is being diverted to the inside route. It is proposed to dredge the canal to a sufficient depth to allow big coasters to pass through. It was away back in 1787 when the first charter for a Dismal Swamp canal was issued, and George Washington's name was on the list of directors. A canal was first opened to traffic in the swamp country in 1822, and had become fairly profitable when the civil war "happened," and incidentally ruined the canal as a profitable enterprise. The canal has again been made ready for business, according to report, after a number of years of repairing. It is 22 miles long, and opens about 2,500 miles of inland navigation, comprising the many rivers and streams of the Carolinas.

Difficult Task.—"What's the matter, old man? You look hot and excited." "Just been tryin to dodge a cross-eyed girl on a bicycle."—Detroit Free Press.

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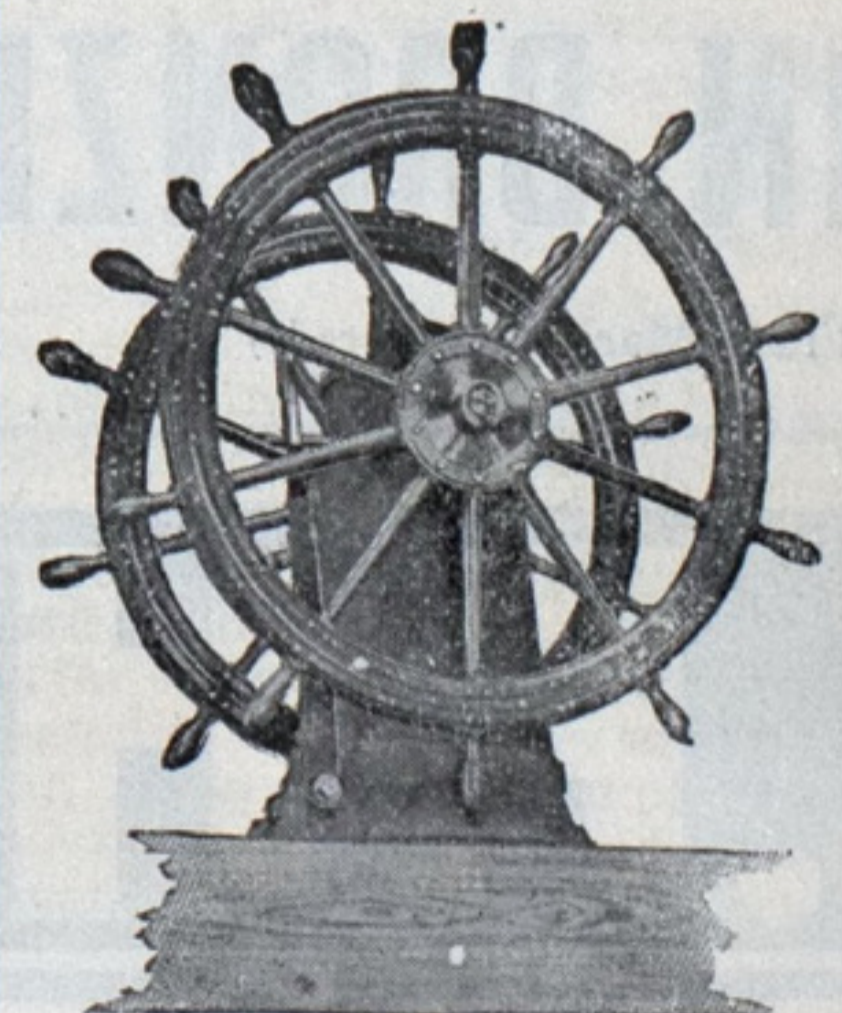
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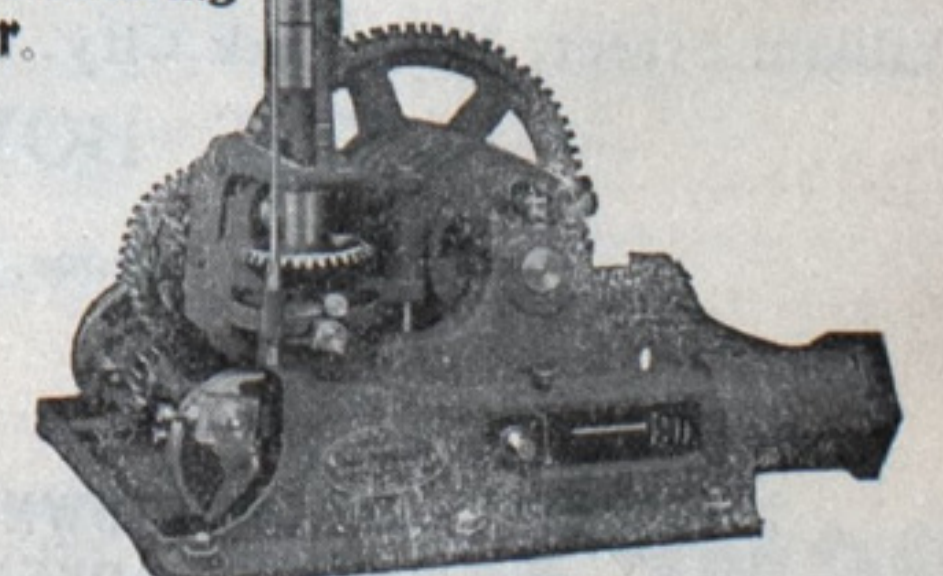
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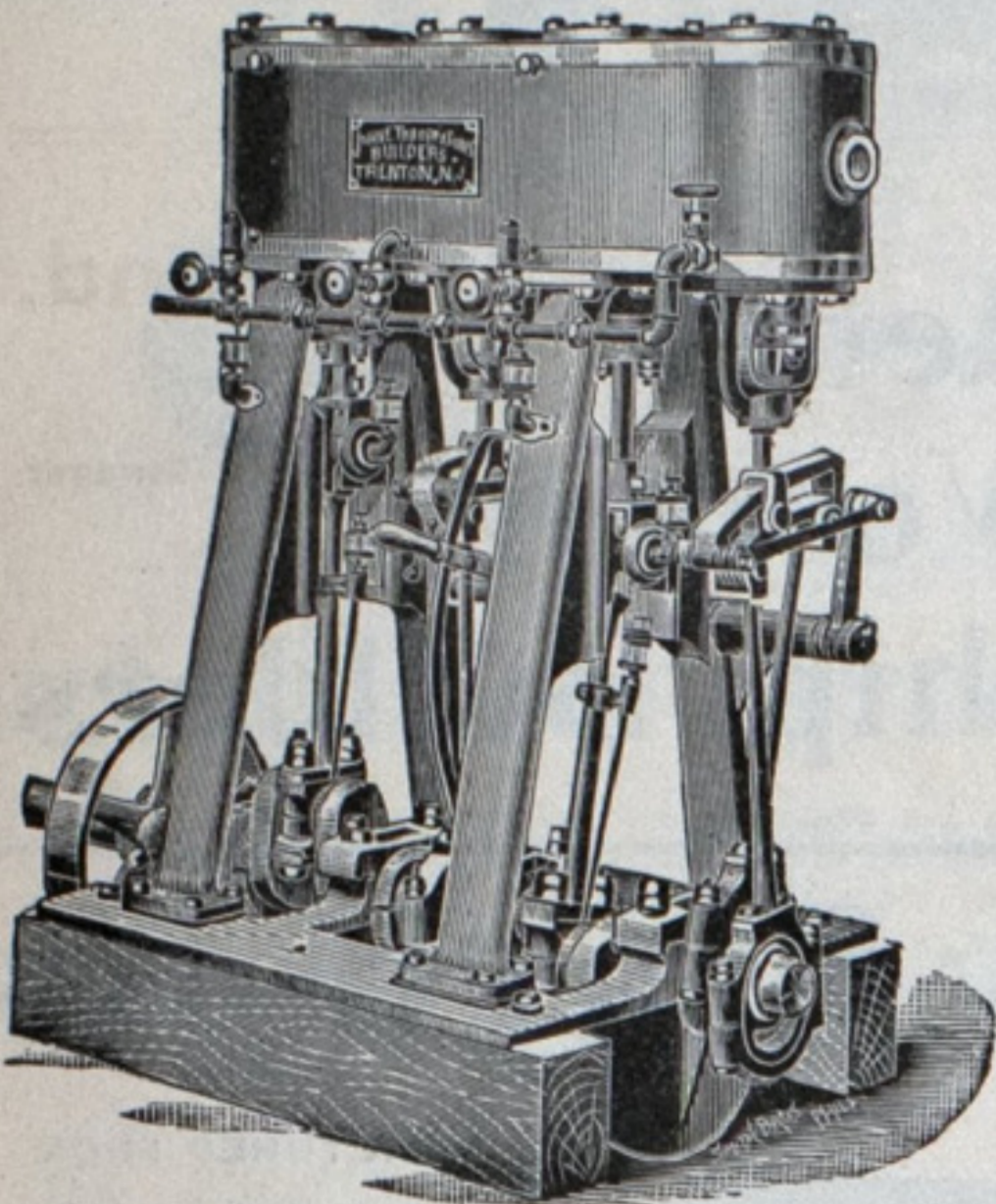
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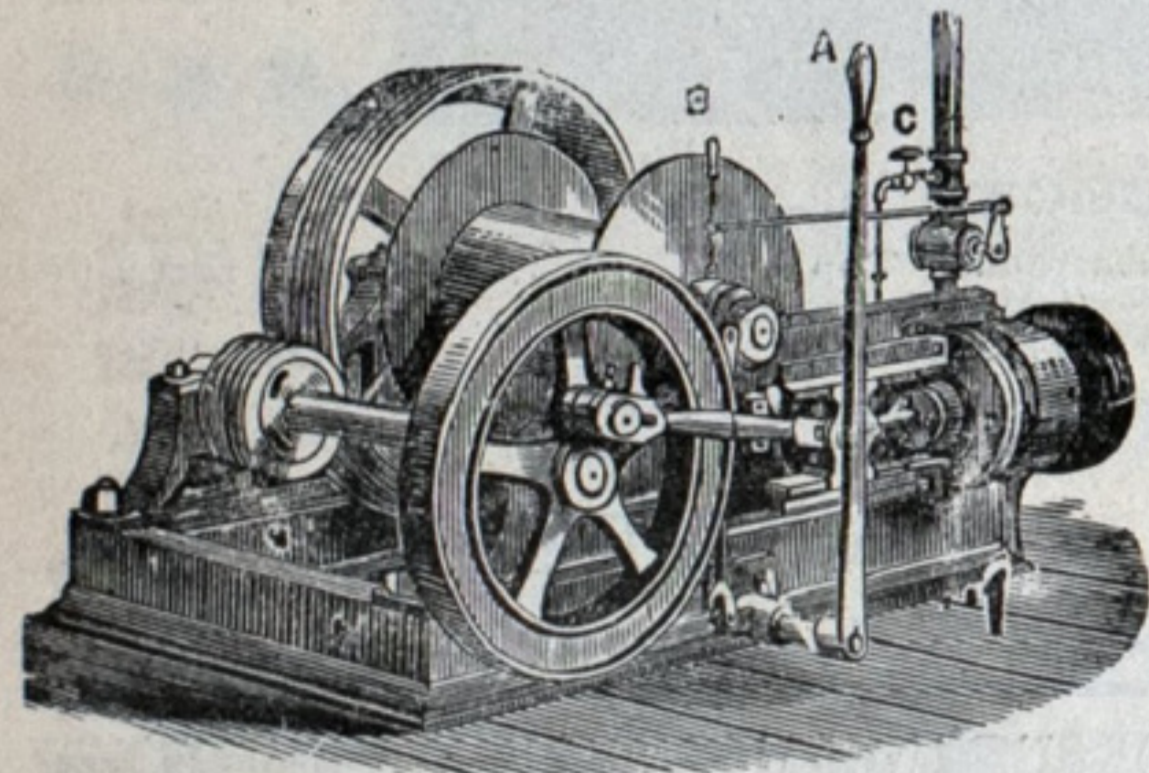
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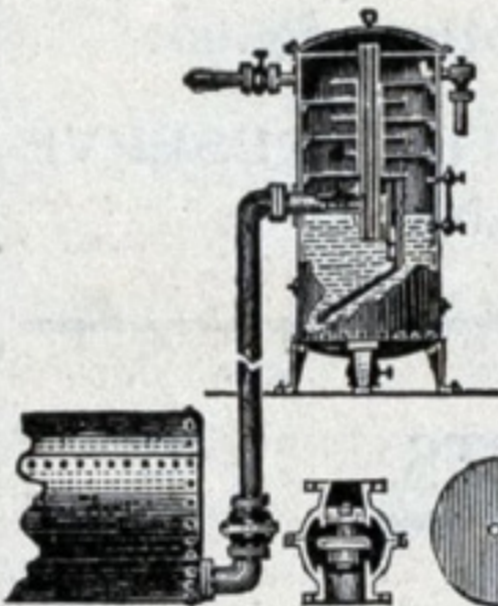


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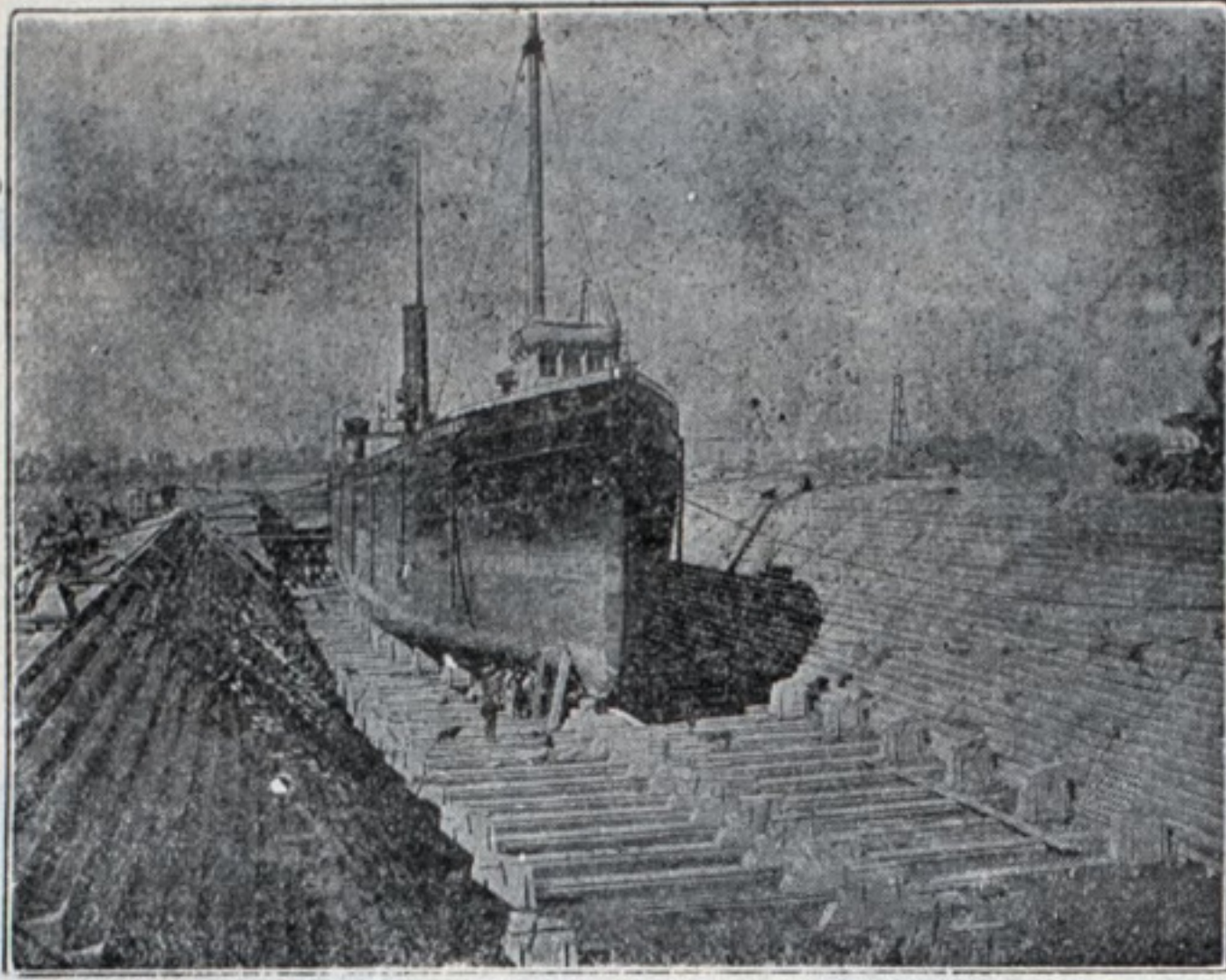
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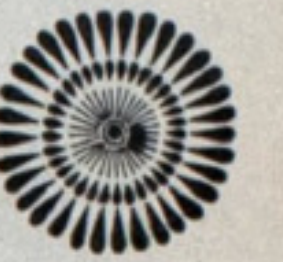
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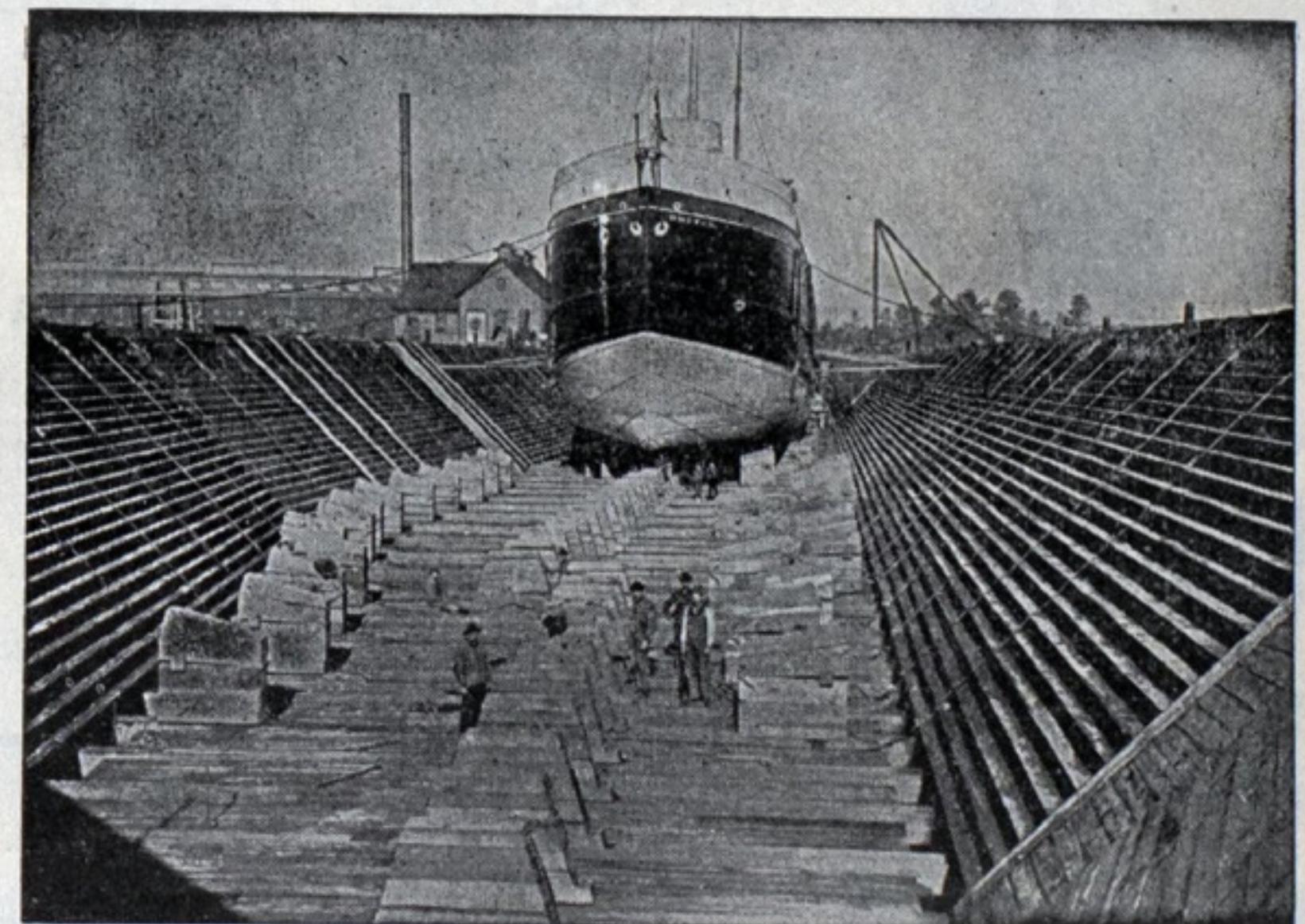
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Of all Classes built on shortest possible notice at our yards at WEST SUPERIOR, WIS., and also at EVERETT, WASH.

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Plates and Material always on hand to repair all kinds of Metal Ships in Shortest Time.



Best Quality of Oak in Stock for Repairing Wooden Vessels of all Classes.

SIZE OF DOCK			
Length, Extreme.....	587 feet.	Entrance, Top.....	55 feet 9 in.
Breadth, Top.....	90 " 4 in.	Entrance, Bottom.....	50 "
Breadth, Bottom.....	52 "	Depth over Sills.....	18 "

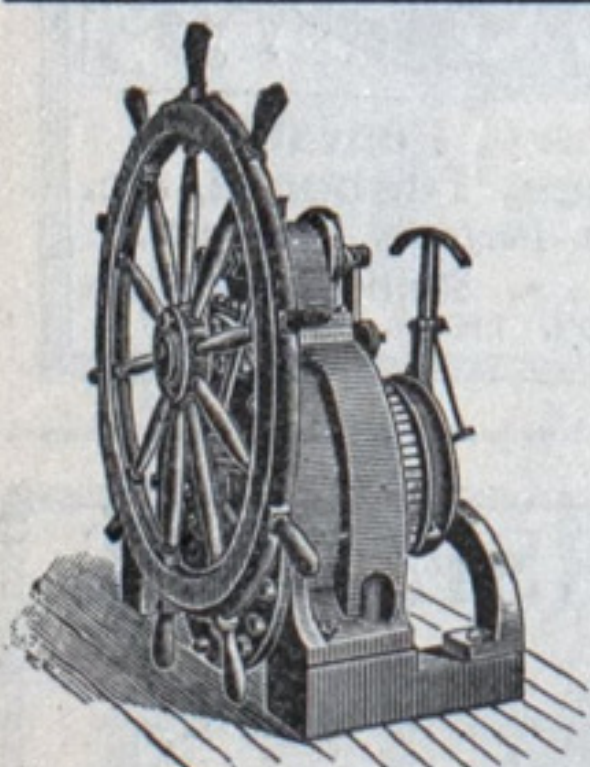
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Prices for Repairs and Docking same as at Lower Lake Ports.

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A Number of Propeller Wheels in Stock at Dry-Dock.

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The best and most reliable.
Generates no heat in pilot house.
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Can be changed from power to hand steering instantly.
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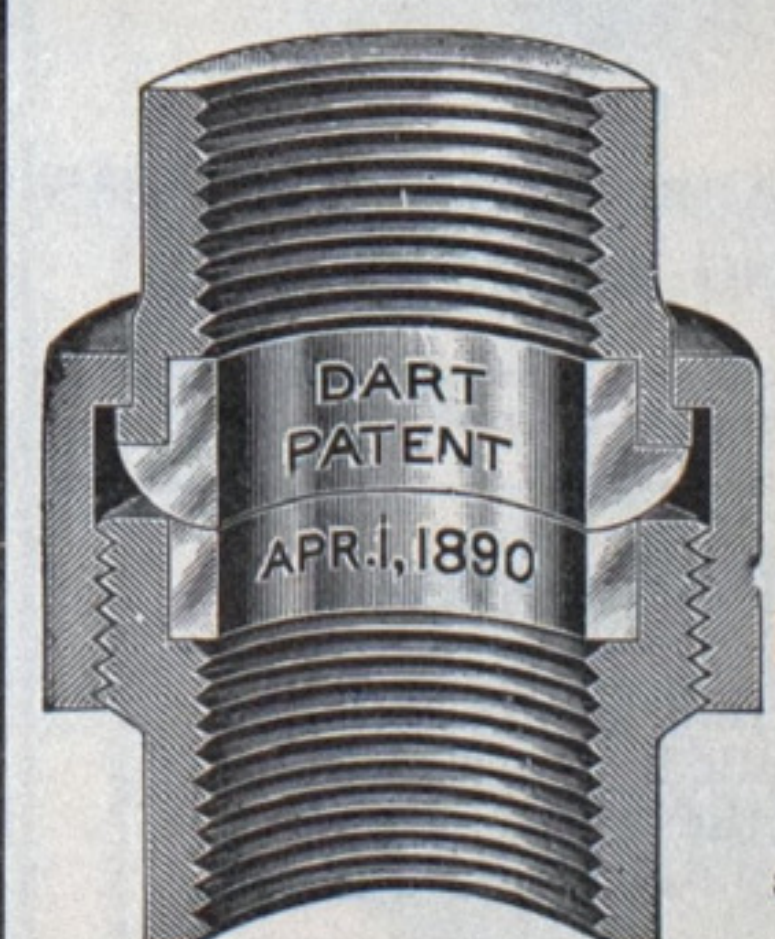
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The Goodrich Transportation Co. are prepared to do all kinds of Repair Work to Machinery. Also Joiner Work.

Goodrich Transportation Company's Repair Shops include complete Carpenter and Joiner Shop. New Modern Machine Shop. Blacksmith Shop, including Steam Hammer, Punch and Shears, etc., Brass Foundry. Repair Shops are adjacent to Dry Dock and are equipped with best Modern Machinery. Portable Electric Drills, etc., complete Electric Power Plant for supplying motors on board ships, and lighting. Night work a specialty. All work in charge of experienced and skilled mechanics. Charges moderate. Twenty-one feet of water alongside of shops.



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